



A full crew of Danish student seamen man this full-rigged sailing vessel from Denmark, which crossed the ocean to visit A Century of Progress exposition.



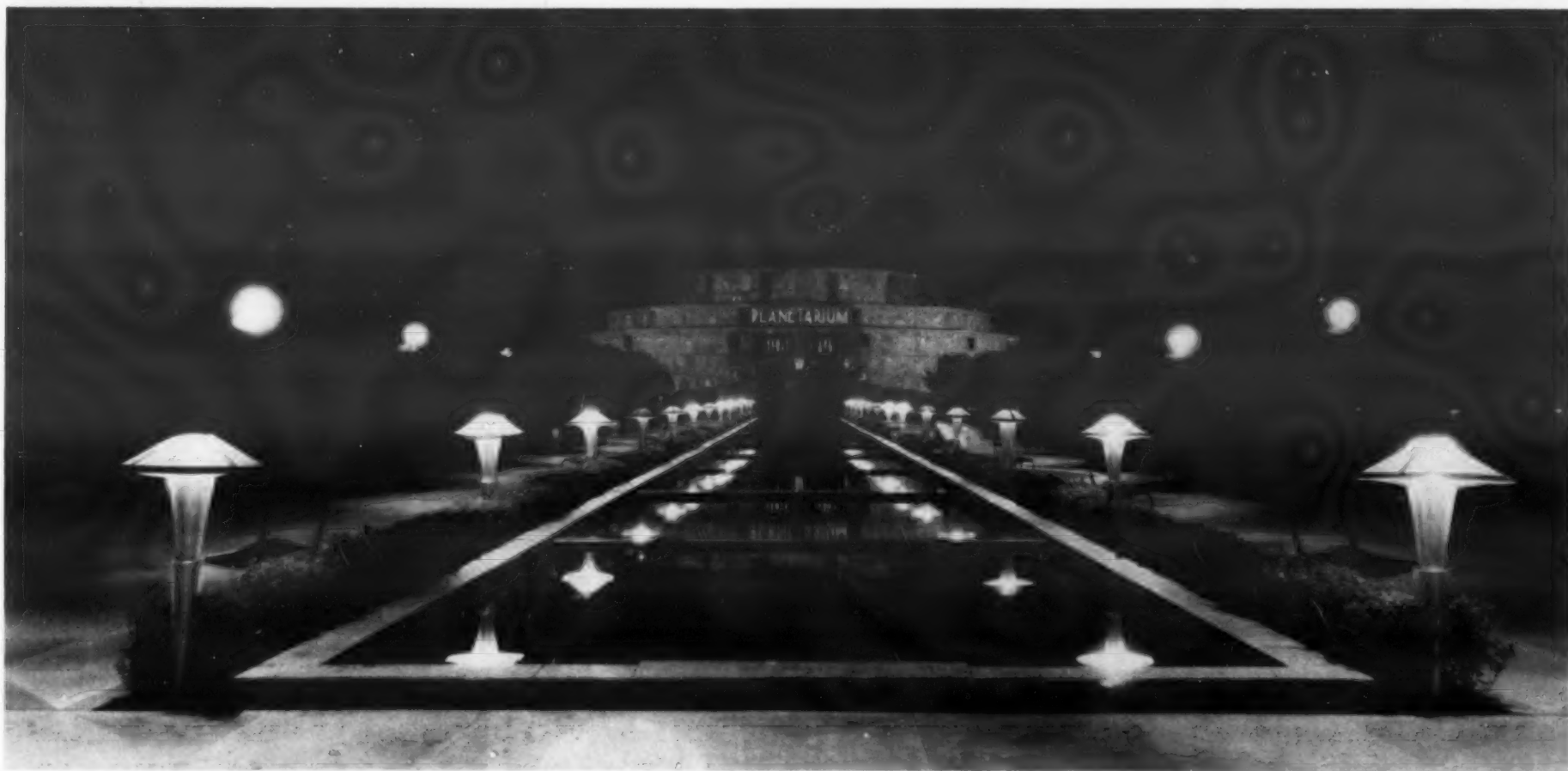
Chief Inspector Ralph Bisbee shows the new Westinghouse Master Series of electric refrigerators to Ray Cosgrove, manager of the refrigeration division.



The Scalavator is a device which illustrates how large forces can be controlled by small ones. By breathing on the Scalavator, the girl can lift herself several inches off the floor.



Homemakers who visit the Westinghouse exhibit at A Century of Progress are given a thorough demonstration of Westinghouse washing machine and ironer by skilled attendants.



This remarkable night photograph of the Adler Planetarium also shows two rows of Westinghouse mushroom lights, which have sprung up—like real mushrooms—all over the northern end of the Fair grounds. After one visit to the Planetarium itself you will know more about astronomy than any college course could give you.

REFRIGERATION NEWS

Registered U. S. Patent Office

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NEMA CODE SIGNED BY PRESIDENT ROOSEVELT

WESTINGHOUSE PRICE RAISES GO INTO EFFECT

Price Increases Amount To 6.47 Per Cent On Entire Line

MANSFIELD, Ohio—Price increases have been placed on all but one model of the Westinghouse electric refrigerator line, according to an announcement sent to dealers and distributors last week by R. C. Cosgrove, manager of the refrigeration division of Westinghouse Electric & Mfg. Co. here. These revisions—ranging from 50 cents to \$75—make an overall increase of 6.47 per cent on the price of the line.

In connection with his announcement, Mr. Cosgrove said, "With the price of raw materials and labor substantially advanced, it has been found necessary to increase the retail price of the finished product to maintain a sound merchandising program and stabilize production."

"Prices of some raw materials used in the manufacture of refrigerators have advanced, in many cases, as much as 100 per cent within the last few months."

The following table lists all models of the Westinghouse line, together with the old and new retail prices on each model. These prices are for the first zone, and include freight, tax, and installation charges:

Model	Old Price	New Price
BL-43	\$115.00	\$123.50
BL-45	129.00	138.00
BP-45	149.00	159.00
BL-55	149.00	159.00
BP-55	174.00	184.00
BL-65	184.00	195.00
BP-65	219.00	230.00
BL-75	199.00	210.00
BP-75	234.00	245.00
AP-90	324.00	344.00
AP-130	399.00	429.00
AP-200	499.00	534.00

NORGE FACTORY MEN ORGANIZED FOR NRA

MUSKEGON HEIGHTS, Mich.—Employees of the Norge Corp. plant here have organized a shop committee to function under the collective bargaining provisions of the National Industrial Recovery Act, according to H. Morley, plant manager.

Of the 1,100 employees of the plant all but 10, or less than one-tenth of 1 per cent, voted in favor of the organization of a shop committee.

Employees have been provided with a meeting place in the plant where they will elect the seven representatives who will make up the committee, and where they can hold future discussions of wages, piece work rates, bonus schedules, rules, safety provisions, economy suggestions, employment and working conditions, recreation and athletics.

The departments in the plant have been grouped as follows: first, wood shop, rough cut and yard; second, porcelain; third, steel and wire shelf department; fourth, evaporator division; fifth, cabinet assembly, finishing, trimming, crating, and washing machine division; sixth, stock, car loading, unloading, warehouse, millwrights, inspection, power, machine shop, and all non-productive departments; seventh, unit assembly.

When the new organization has been completed any individual employee having any grievance or suggestion to make will take it up with the shop committee member from his group. The shop committee member will notify the foreman. If it is a matter which can be handled by the foreman it will go no farther. If not, it will be referred to the superintendent or to Mr. Morley as final arbiter.

J. E. Otis Is President Of Stewart-Warner

CHICAGO—Joseph E. Otis, executive vice president of Stewart-Warner Corp., manufacturer of Stewart-Warner refrigerators, has been named acting president following the resignation of Charles B. Smith.

Refrigeration Accessory Manufacturers To Form Association

Plan to Apply for Membership in Nema; Adopt Resolution

The following resolution was adopted by a group of manufacturers of accessories and parts for electric refrigerators at a meeting held Aug. 7 in Chicago.

"Whereas two meetings have now been held to decide

"(1) If an association of Electric Refrigeration accessory manufacturers should be formed for the purposes of N.R.A.;

"(2) Under what basic group and code such association, if formed, should operate or whether it should operate as an independent group;

"(3) If formed, how it shall be organized; Be it resolved at this meeting representing such group of manufacturers, that

"(1) The Association of Electric Refrigeration Accessory Manufacturers, for the purposes of the N.R.A., be formed immediately;

"(2) Said Association to act at present under the basic Nema code by paying the dues required by Nema for their code, offices, and government contact facilities;

"(3) That this association invite all such manufacturers to become members;

"(4) That the present organization of this association shall comprise a temporary executive committee composed of the following members: Walter Seeger, chairman, Harvey B. Lindsay, C. C. Hull, J. W. Hatch, and W. M. Whalen, to be superseded by permanent officers and executive committee after completion of permanent organization;

"(5) That said committee shall meet as soon as possible to undertake on behalf of this association the steps necessary to carry out the foregoing, advising all members of steps taken;

"(6) That all such manufacturers be notified of this preliminary action and be requested to formally ratify the action of their representatives at this meeting (if present) or formally signify their agreement to such action (if not represented) by letter to the chairman of the meeting within 10 days herefrom."

TWO MODELS ADDED TO FRIGIDAIRE LINE

DAYTON—Addition of two new household refrigerator models to the Frigidaire line was announced last week by Frank R. Pierce, sales manager of Frigidaire Corp.

The two new models are between the standard series finished in dux and powered with a rotary sealed-type compressor, and the super series finished in porcelain and powered with a two-cylinder compressor.

The new models are known as the SL-63 and SL-73, with six and seven cubic feet of food storage space, respectively. They are finished in dux and powered with the twin-cylinder compressor. They have the same ice freezing capacity and same refrigeration power as comparable sized models in the super series, and the general outline of the cabinets is similar.

Automatic ice tray release and automatic defrosting, cold control and other major features of the 1933 super line are standard equipment on the two models. Model SL-63 will sell for \$150 (freight extra), and the SL-73 will sell for \$194.

OFFICERS APPOINTED FOR GENERAL HOUSEHOLD FIRM

CHICAGO—New officers of the General Household Utilities Co., in addition to J. Clarke Colt, chairman of the board, and W. C. Grunow, president, were announced last week.

H. C. Bonfig is vice president, Ralph Trimarco, secretary; J. P. Rogers, treasurer; Sidney Arneson, assistant secretary; and P. J. Schlitz, assistant treasurer.

Members of the board of directors include J. C. Condon, A. C. Winnan, W. C. Perkins, A. C. Messick, Lester Armour, L. H. Callahan, Walter Dyer, all of Chicago, and George Ball of Muncie, Ind.

TEMPRITE EARNS PROFIT OF \$3.05 FOR QUARTER

DETROIT—An increase in sales of 471% for the three months ending June 30, as compared with sales for the same period of time in 1932 is announced by P. Fred Lesley of Liquid Cooler Corp. July of this year has also shown a substantial increase over July, 1932, he states.

Net profit for this second quarter was equal to \$3.05 per share on 16,092 shares outstanding as of June 30, 1933.

Parts Makers Plan Organization In Chicago

By F. M. Cockrell

CHICAGO, Aug. 7 (Special Wire to Electric Refrigeration News)—Manufacturers of accessories, parts and supplies for electric refrigerators meeting here today passed a resolution calling for the formation of The Association of Electric Refrigeration Accessory Manufacturers to take a course of action in accordance with the provisions of the National Industrial Recovery Act.

Manufacturers of fin coils, at a meeting in New York City tomorrow (Aug. 8) called by J. W. Hatch, general manager of Bush Mfg. Co., are expected to join the accessories group organized here today.

The accessory group will act at present under the basic Nema code by paying the dues required by Nema for administration of the code.

An executive committee was named to carry out the course of action laid down in the resolution and to inform other manufacturers of accessories and parts of the proceedings of the meeting and to invite their ratification of the action taken at the meeting.

The following attended the meeting: Walter Seeger, Seeger Refrigerator Co. (cabinets); G. C. Taylor, Kerotest Mfg. Co. (valves and fittings); R. W. Kritzer, Peerless Ice Machine Co. (fin coils). (Concluded on Page 10, Column 1)

Roto No. 4

This issue of Electric Refrigeration News is supplemented by a rotogravure section devoted to A Century of Progress exposition in Chicago, and featuring Grunow refrigeration at the Fair.

Three other rotogravure sections portraying the 1933 World's Fair have appeared with the last three issues of the News. General Electric, Frigidaire, and Westinghouse exhibits have been featured, in that order, in these preceding supplements.

Next issue of Electric Refrigeration News (Aug. 16) will carry a fifth rotogravure supplement, featuring the Norge exhibit at A Century of Progress.

RETAIL CODE HEARING WILL START AUG. 15

WASHINGTON, D. C.—Open hearings start here Aug. 15 on the tentative code of trade practices for retail establishments which is designed to eliminate unfair competition among retailers.

Wage and hour stipulations for the retail dry goods, department, mail order, specialty shop, and hardware trades represented by the various national associations were approved last week by Gen. Hugh S. Johnson. These stipulations remain in effect until final codes for the individual trades are promulgated and approved.

The code is sponsored by the National Retail Furniture Association, National Retail Hardware Association, Mail Order Association of America, National Association of Retail Clothiers and Furnishers, National Retail Dry Goods Association, and National Shoe Retailers' Association.

Retailers not members of any association can come under the code and be eligible to receive their "blue eagle" by joining the subscribing groups or through voluntary agreement with President Roosevelt.

The trade practice provisions of the code, upon which hearings will open Aug. 15, are as follows:

"On and after the effective date of this code—

"A—No individual or organization selling goods at retail shall sell any merchandise at less than the next invoice delivered cost or current market delivered cost, which ever is lower, (Concluded on Page 10, Column 2)

Erbach Vice President Of Lipman Co.

BELOIT, Wis.—Fred Erbach, formerly chief engineer of the General Refrigeration Sales Co., manufacturer of Lipman refrigeration equipment here, has been appointed vice president and general manager of that company, according to C. P. Spalding of the sales department. Before joining the General Refrigeration Co., Mr. Erbach was formerly connected with Kelvinator Corp.

UNIVERSAL RAISES PAY OF FACTORY WORKERS

DETROIT—G. M. Johnston, president Universal Cooler Corp., has just announced a 10 per cent increase in rate of pay to Universal factory workers and that working hours have been reduced to 36 hours a week.

GENERAL CODE BECOMES LAW NEXT TUESDAY

Refrigeration Division Meets in Detroit Tomorrow

DETROIT—The Nema code which will govern the electrical manufacturing industry during the term of the National Industrial Recovery Act was approved by President Roosevelt Aug. 4 and will become effective Aug. 15.

A meeting of manufacturers of electric refrigerators will be held at 10 a. m. Thursday, Aug. 10, at the Book-Cadillac hotel in Detroit for the purpose of drawing up a supplemental code to regulate trade practices in the electric refrigeration industries. The meeting was called by G. M. Johnston, chairman of the refrigeration division of Nema (National Electrical Manufacturers Association), and Louis Ruthenburg, consultant to the refrigeration division of Nema.

Invitations were issued to members of the refrigeration division and to

On page 9 of this issue is the text of the Nema code which was signed by President Roosevelt on Aug. 4 and which becomes effective Aug. 14.

manufacturers who have applied for membership in the refrigeration division.

Mr. Ruthenburg has been collecting and preparing agenda for the meeting for the past several weeks. When a code has finally been settled upon it will be filed with the NIRA administration for whatever public hearing may be deemed necessary.

A few significant changes were made in Nema code just before it was finally approved. The provision that the hourly rate of labor shall be "40 cents per hour, unless the rate per hour for the same class of labor was on July 15, 1929, less than 40 cents, in which case the rate per hour shall be not less than the rate per hour paid on July 15, 1929, but in no event shall the rate per hour be less than 30 cents per hour"—was changed so that the ultimate minimum shall not be less than 32 cents per hour.

In addition, the provisions covering the payment at an 80 per cent rate to casual and incidental labor and learners has been limited to learners only, and the number to whom these payments are applicable has been reduced by specifying that this number shall not exceed 5 per cent of the number of process and directly incident employees. The same provision has been made applicable to office boys and girls and learners in the "white collar" class.

G. M. SALARIED WORKERS GIVEN INCREASE IN PAY

NEW YORK CITY—All salaried employees of General Motors Corp. received a 10 per cent increase in pay on Aug. 1, it was announced here on Aug. 7. It was understood that the salary increase also affected employees of G.M. subsidiary companies, including Frigidaire Corp.

When directors of the corporation effected the salary increase, they also approved the regular quarterly dividend of 25 cents a share on common stock, and \$1.25 on the \$5 preferred stock.

Wage earners of the company were given a 15 per cent boost in pay recently, and the announcement of the salary increases stated that the latter raise was instituted to re-establish the former ratio between wage and salary levels.

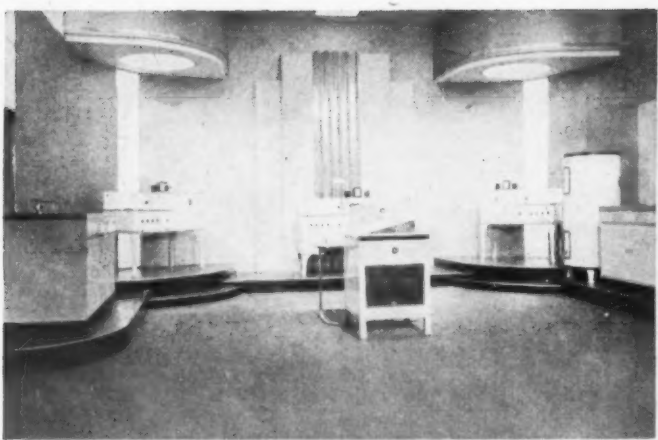
Liquid Cooler Raises Employees' Wages

DETROIT—An average increase of 15 per cent in scale of pay and a reduction to 40 working hours per week, have just been announced by P. Fred Lesley, Liquid Cooler Corp. The new time schedule embraces five working days of 8 hours each.



GENERAL ELECTRIC

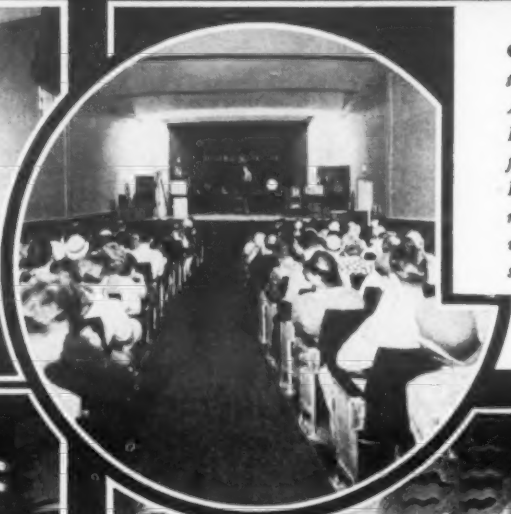
at the World's Fair



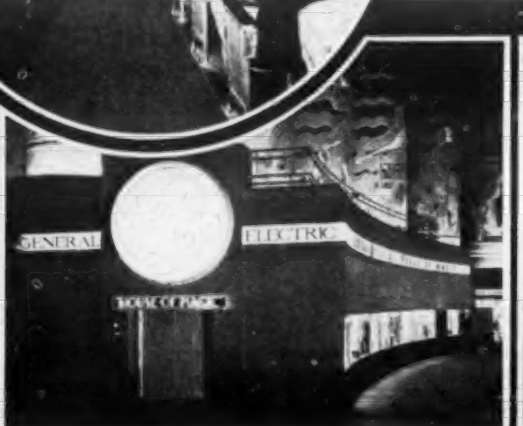
EVERY DAY thousands of people from all corners of the nation visit the General Electric exhibit at A Century of Progress. Great attention is centered around the General Electric "Talking" Kitchen as it unfolds its fascinating story of freedom from kitchen drudgery. It has proved to be a tremendous influence in creating prospects for G-E retailers. Those interested in the G-E Kitchen or G-E Appliances in the Kitchen are invited to register at the exhibit. Each name and address is forwarded to the G-E dealer in the prospect's home community. Each is a potential customer for General Electric products.

Through the World's Fair exhibit and other effective nationwide promotion activities, General Electric is creating a desire in the minds of millions for the complete General Electric Kitchen.

Beginning with a G-E Refrigerator, Range or Electric Dishwasher, a complete General Electric Kitchen may be acquired step-by-step for as little as \$9 a month. G-E retailers who feature this plan are substantially increasing their sales and profits and building a progressive, permanent business. General Electric Co., Specialty Appliance Sales Dept., Section DF 81, Nela Park, Cleveland, Ohio.



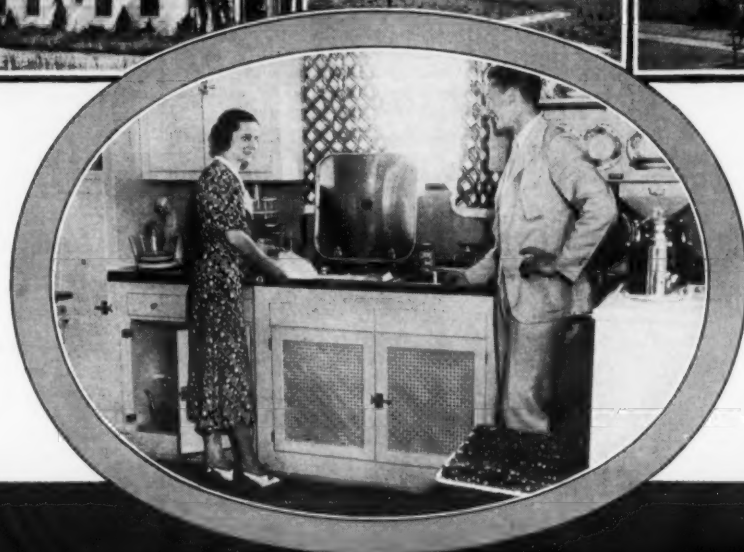
● Illustration at left shows the G-E House of Magic Auditorium at the World's Fair. Here representatives from the famous General Electric Research Laboratories entertain hundreds daily with mystifying demonstrations of electrical magic.



MODEL MODERN HOMES AT A CENTURY OF PROGRESS ALL HAVE G-E EQUIPMENT



IN THE KITCHENS of model modern home exhibits at the World's Fair will be found G-E refrigerators, ranges, dishwashers and complete General Electric Kitchens. Throughout the entire Century of Progress grounds, General Electric products are constantly in evidence—repeatedly seen by millions who attend the Fair. G-E commercial storage cabinets and display cases, G-E water coolers, beverage coolers and room coolers, Monitor Top refrigerators and other appliances are installed in many of the buildings.



*Wherever you go throughout the entire
Century of Progress you will find the Famous*



MONOGRAM

● Below is a numerical key to illustrations at the right—listing a few of the World's Fair buildings where General Electric appliances are installed:

No. 1. Federal Building

No. 2. Interior of Federal Building, showing G-E refrigerating equipment in restaurant kitchen

No. 3. Travel and Transport Building

No. 4. Hall of Science

No. 5. Paper Foundation exhibit

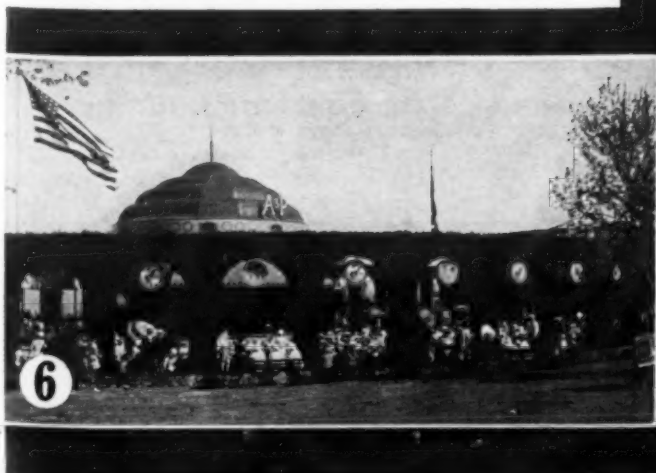
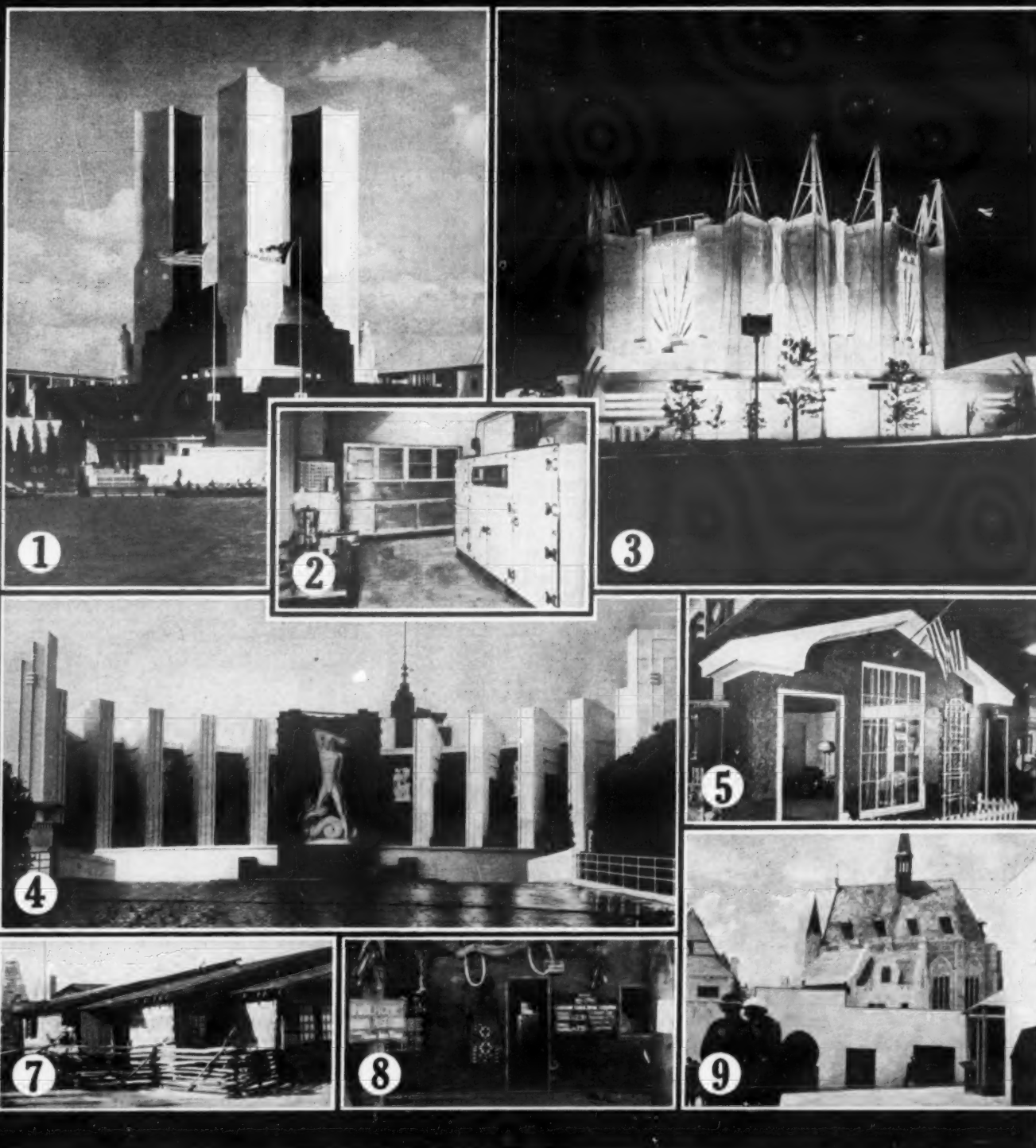
No. 6. A & P Carnival

No. 7. Rutledge Tavern

No. 8. Indian Village Trading Post

No. 9. Belgian Village

In addition, G-E refrigerators and other appliances are located in the Administration Building, the Agricultural Building, the Personnel Building, the modern kitchen exhibit in the Heinz group of 8 kitchens, and in the Manhattan Gardens.



BY GEORGE F. TAUBENECK ---

Home, Sweet Home, With Variations

Biggest news so far as this department is concerned is that we've been home for a week. And, by gum, it has been more fun than we thought it might be. Chief reasons: so many interesting people have dropped in on us for short visits.

We like to see people, like to hear what they have to say, to be shown what they are doing. That's why we love our job so much, and why we've put 11,000 miles in three months on "The Yellow Peril" (if you are one of the few in the industry who haven't had a ride in this 1936 model streamlined gasoline bullet, drop us a card and we'll put you on the schedule).

But if every week would produce as many well-informed visitors as this one, it might pay us to stay home.

Bert Taylor Takes A Rest

Take, for instance, A. M. TAYLOR, who has been successively advertising manager of Copeland, advertising manager of Kelvinator, and merchandising director of Leonard.

Bert dropped in to tell us he is no longer with Leonard, and to say goodbye before going on a long vacation from work of any kind. He's been at it pretty steadily ever since we've known him.

He also brought the information that Leonard sales are some 75 per cent ahead of last year, and that a Daniel Starch survey showed Leonard advertising with the "human interest" step-saving theme to be the best-read refrigeration advertising of the year.

Mr. Taylor, we might add, is not retiring from active life. He'll be glad to talk business with you.

Another former refrigeration executive who is out looking for a new connection is CHARLES STRAWN who, until a few fortnights ago, was manager of the Stewart-Warner refrigeration division.

He tracked us down to the La Salle hotel in Chicago, and we had quite a talk. Probably very soon now he'll be around to call on you, and you, and you hiding in the corner office over there behind that file of unanswered correspondence.

Psychologist Sterling & Elusive Mr. Terry

Two of our most welcome callers were Messrs. JIM STERLING, 18-karat advertising and sales promotion manager of Norge, and HARRY TERRY, account executive for the Cramer-Krasselt Co., Norge's advertising agency.

They arrived about 5:15 p. m., and left some three hours later, as we remember it, feeling very clubby indeed. These two like to hunt in a pack, and generally make a nice killing.

In the sub-headline above we refer to Mr. Terry as "elusive." He is that. Your correspondent has been inclined to think highly of his own ferreting abilities, and thought he had a talent for locating hard-to-find men and facts.

But we spent from Friday until Monday in Chicago and Milwaukee last week-end trying to locate Mr. Terry so that we might get together on a couple of stunts for the rotogravure section which you are to see with the next issue of ELECTRIC REFRIGERATION NEWS. But (we hang a shamed head) he was always a jump, and sometimes two jumps ahead of us. No, he doesn't owe us any money.

And that reminds us. Even if we couldn't find the affable Mr. Terry, we did see Major HOWARD BLOOD, president of Norge Corp. and first vice president of Borg-Warner, on a bright Monday driving home from Chicago.

We stopped at the side of the highway, chatted, snapped cameras at each other (did you know that he is an amateur photographer of considerable distinction?), and the Major introduced us to his charming family. The lines of "the Yellow Peril" interested him, as did its "over-ride" transmission.

Jim Sterling, we have always figured, is one helluva smart promotion man. And how he enjoys cooking up stunts! His ideas are never warmed-up left-overs; they're always

piping hot *pieces de resistance* concocted from brand new recipes.

Take his series of sales training bulletins, for instance. Like his sales manual, they are written in story form. Old Crombie, the wise old merchandiser who was the hero of the sales manual yarn, again walks through these pages. And Old Crombie, incidentally, is becoming quite a real flesh-and-blood character.

Sales Training Bulletin No. VI, however, has a new leading man. It is "Elston Herndon, star reporter of the Refrigeration World."

Which, of course, is none other than ELSTON HERRON, staff writer for ELECTRIC REFRIGERATION NEWS. The writer expertly wafts a few whiffs of El's hearty exuberance, native zest, and unaffected gusto your way; and you instantly like this fictional character just as you'd warm up right away to the real El Herron.

We don't need to point out that El will probably take especial interest from now on in reviewing Norge promotion literature. Psychologist Sterling!

'Sparky' Directs Some Movies

Miss EDNA SPARKMAN, home economics chief for the Westinghouse refrigeration department, was another lively visitor who gave our offices the once-over last week.

Here to direct the production of some movies and slide films which will be shown in connection with joint

Kroger-Westinghouse cooking schools soon. Miss Sparkman was her usual high-spirited, all-hepped-up self. What a kick she gets out of life!

"Sparky" let us drive her over to the studios where the pictures were being made, and we watched the usual tedious preparations for the shooting. And here's a laugh:

Food to be used in these Westinghouse movies was being kept in a big super-series Frigidaire! There were some Westinghouse refrigerators around, of course, but they were apparently purely ornamental.

Bollmeyer, Irwin, Shaw, Richards, Tobin—Publicity Men de Luxe

In our earlier newspaper days we were brought up to believe that, with the possible exceptions of radio announcers and southpaw pitchers, publicity men were the lowest form of animal life.

Mebbe we were wrong. Or mebbe the publicity men in the refrigeration industry belong to a different breed. If the latter be true, the strain should be pedigreed, segregated, and allowed to multiply uninterrupted. Because fellows like FRED BOLLMEYER of Maxon, Inc. (General Electric), JIM IRWIN of Frigidaire, BOB RICHARDS of Westinghouse, and FRED SHAW and STAN TOBIN of Brooke, Smith & French (Kelvinator and Leonard) are the salt of the earth.

All the above mentioned men are ex-newspapermen. They know how to write, can smell news, and don't try (at least, not often) to foist blurbs and hokey upon us. And they are capital chaps, personally.

All five have paid recent visits to us here in the office. Shaw and Tobin live in Detroit, and sauntered in together. Bollmeyer flew over from Cleveland, Irwin arrived on an early morning train from Dayton, and Richards dropped in from Mansfield.

Following the visits from Bollmeyer and Richards the editorial staff received welcome presents of card decks, as acknowledgements of the fine way the boys entertained them and, incidentally, financed their trips home.

Why Don't You Come Up Sometime?

How do you like our rotogravure sections? HOWARD MATEER is just back from a swing around the circle, and reports that they've stirred up a lot of interest in the field. Our numerous visitors last week also talked a lot about this new feature.

Your favorite correspondent has practically been living in Chicago during the last six weeks, collecting the pictures, writing the captions, preparing the lay-outs, and contacting the Chicago rotogravure printing house which has been doing the job.

Those who have seen our miniature "candid" camera may be interested to know that a great many of the "human interest" pictures used in the rotogravure sections were enlargements from tiny photos taken with it. JACK CRANDALL of the Fair's promotion department, BRUCE ROBERTSON of Westinghouse, and a brilliant Japanese artist by the name of JUN FUJITA worked with us on the other photographs employed.

Sometimes it seemed to us that we were concentrating on Chicago too much, but an extenuating thought was the recollection of the fact that almost everybody else seemed to be in Chicago, too.

Of course you've heard it said that if you stand on the corner of Broadway and 42nd streets in New York City long enough, you'll see everybody you ever knew. Well, that seems to be true of Chicago this summer.

One favorite gathering place of industry executives over there is the Chez Paree club, where the food is like Caesar's wife (above reproach), and the entertainment just about the best you will find anywhere in the country at present.

Some of the men we've found there have included P. B. ZIMMERMAN and WALTER DAILY of General Electric, DICK COOPER, G. E. distributor in Chicago, FRED BOLLMEYER and RAY BAKER of Maxon's, BILL GRUNOW (who is a great friend of manager MIKE FRITZEL) and his sales manager, H. C. BONFIG, and many others.

Mr. Cooper's chauffeur has been keenly interested in our new buggy, and as a result we've probably talked with him more than we have with Dick. Incidentally, Mr. Cooper has a very slick new car, indeed. It is a Packard 12 convertible coupe—the kind of dazzler which makes you pray all your friends and enemies (but not your creditors) will see you riding in it.

Once to vary the routine we met FRANK GIBSON, sophisticated vice president in charge of sales for the Gibson Electric Refrigerator Corp., and enjoyed a good dinner with Lopez music at the Congress hotel.

It was a great time while it lasted, and we enjoyed every minute of it. But now that we're to be home for awhile—

Why don't you come up sometime?

Interesting Places to Visit at the Fair

Hollywood

Admission, adults 40 cents, children 20 cents

Cooperative exhibit of talking-picture making and radio broadcasting, sponsored by Oscar Rosenthal of Chicago, Burton Holmes Films, Inc., Cinegram Productions, and R. C. A. Institutes.

LOCATION: Across the 23rd St. bridge, on the Lake Michigan side of Northerly Island.

WHAT TO SEE: Seven hundred persons at one time can see and hear "talkies" being made on an 80-ft. stage; celebrities at the Fair are to be filmed by news reel companies; amateur moving picture photographers may film scenes on the surrounding outdoor sets; two studios demonstrate radio broadcasting; television equipment is shown.

Indian Village

Admission free

Reproduction of actual life of the Navajo, Hopi, Winnebago, and Sioux Indians, with real tribes participating.

LOCATION: Just north of the 31st St. entrance. Forty-minute stadium shows are given by the Indians four times a day.

TRIBAL CHARACTERISTICS:

Navajo: Nomadic sheep-herding Indians from the Southwest, who live in log hogans. Weaving of Navajo rugs is demonstrated.

Hopi: Town-dwelling Indians of the Southwest, who live by raising corn. Adobe houses to shelter them have been constructed at the Fair.

Winnebago: Indians from Wisconsin forests. Their rounded bark houses are reproduced at the Fair, where they demonstrate making of birch bark canoes, baskets, moccasins, bows and arrows, and beadwork.

Sioux: Hunting Indians from the plains, the Sioux still hark back to the days of the buffalo by preferring tents made of buffalo hide. Their industries include tanning of leather and fashioning of moccasins.

Old Fort Dearborn

Admission, adults 25 cents, children 10 cents

Reproduction of the original Fort Dearborn erected near the Chicago river in 1803.

LOCATION: Near 26th St., south of the Midway. The rough log buildings enclose a square parade ground with a flagpole in the center. Block-houses from the northeast and southwest corners. Included in the buildings are soldiers' quarters, supplies building, powder magazine, and officers' quarters.

HISTORICAL EXHIBITS: Around the walls, historical documents and records, including photostatic copies of plans of the old fort; Indian treaties; English four-poster bed 115 years old; antique pewter dishes; old powder horns and firearms; large open fireplaces with old-fashioned cooking equipment in place; children's trundle

beds; model store of the old fort; two of the original fort's brass cannons; a soldier's day's rations.

De Saible and Marquette Cabins

Near old Fort Dearborn are two reproductions of historic cabins. First of these is the de Saible cabin in which Chicago's first citizen, Jean Baptiste Point de Saible, fur trader, lived. The Marquette Cabin commemorates Father Jacques Marquette, who came to Lake Michigan via the Chicago river in 1673.

The Lincoln Group

Reproductions of five buildings which trace the development of young Abraham Lincoln.

BIRTHPLACE: One-room cabin, Hodgenville, Ky.

PIGEON CREEK HOUSE: Lincoln's second home, near Pigeon Creek, Indiana.

SALEM STORE: General store in Salem, Ill., where Lincoln got his first training in reading law.

RUTLEDGE TAVERN: Memorial to the Ann Rutledge-Abraham Lincoln romance.

THE WIGWAM: Chicago hotel where Lincoln was nominated for the presidency. This is the only building in miniature.

EXHIBITS IN THE BUILDINGS: Cedar cane whittled by Lincoln; his surveyor's hammer; fire tongs from the Rutledge tavern; furniture used by Lincoln; articles from the original store he operated with William F. Berry as partner.

Christian Science Monitor Bldg.

Admission free

Displays of the newspaper, and work of Christian Science in America. LOCATION: On the shore of South Lagoon, just opposite the General Exhibits Group.

EXHIBITS: Journalistic display of the Christian Science Monitor, other literature, Christian Science reading room.

Sears Roebuck Bldg.

Admission free

Architects: Nimmons, Carr & Wright

Service building for visitors to the Fair, combined with a display of Sears Roebuck products.

LOCATION: Just inside the North Entrance, the first building on the west side of the Avenue of Flags. A windowless, air-conditioned structure, modern in design, this building is distinguished by a tall square tower over the facade bearing the words, "Sears Roebuck & Co." at its summit.

INSIDE THE BUILDING: Refrigeration booth, information center, telephone and telegraph facilities, check-room, emergency hospital, rest rooms, mezzanine verandas equipped as lounges, writing room, restaurant, children's playground.

EXHIBITS: Sunken illuminated map of the United States illustrating the extent of the Sears-Roebuck merchandising system; dioramas of the history of Middle West merchandising; old-fashioned kitchen, laundry, bathroom, and furnace room brought up to date before the eyes of the visitor; demonstrations of bed-making and caring for a baby; woodworking shop; fabric and tire-testing machines.

Time and Fortune Bldg.

Admission free

LOCATION: On the western shore of South Lagoon, south of the Hall of Science.

OF PARTICULAR INTEREST: Headquarters of college women at the Fair, including an information service on women's colleges. Schools represented by the Women's College Board here are Barnard, Bryn Mawr, Connecticut, Elmira, Goucher, Lake Erie, Mills, Milwaukee-Downer, Mount Holyoke, Radcliffe, Randolph-Macon, Smith, Sweetbriar, Trinity, Vassar, Wellesley, Wells, Wheaton.

Illinois Host Bldg.

Admission free

Architect: Herrick Hammond

Host building of the Fair, containing an Abraham Lincoln memorial shrine.

LOCATION: On the Avenue of Flags, between the Sears-Roebuck building and the Swedish pavilion. This silver and gold building is surmounted by a 70-ft. tower.

INSIDE THE BUILDING: Headquarters for Governor Henry Horner of Illinois, and other members of the Illinois Commission; silver-gray auditorium lined with photo-murals of Illinois, agriculture and industries; lounge room on the left of the hall with stained glass windows by Thomas O'Shaughnessy tracing the history of Illinois; rest rooms.

LINCOLN SHRINE: In the hall is a copy of Lorado Taft's statue of Lincoln. A room decorated to duplicate the south parlor in the Lincoln home at Springfield is the next exhibit, containing documents, business papers, letters, etc., written by Lincoln. Final room in the group is a gallery devoted to pictures of the Civil War President.

Enchanted Island

Admission, adults 10 cents, children free.

LOCATION: Between the Electrical building and the Horticultural building, on Northerly Island.

THINGS TO SEE AND DO:

In the center of the island is a Magic Mountain (admission, 5 cents), complete with Fairy Castle. It is surrounded by a moat over which a bridge of swans reaches to the mountain. From the top is a slide, down which all those climbing to the top shoot to the bottom.

Giant figures of the Tin Woodman, the Scarecrow, Popeye the Sailor, and a boy in a large push-wagon, are

scattered over the island. Clowns and giants (notably, the 7½-ft. Enchanter) wander through the crowds of children.

A Children's Theater (admission, 10 cents) on Enchanted Island stages children's plays sponsored, directed, and acted by members of Chicago's Junior League. Plays of interest to children are presented four times a day, three days a week.

Other attractions are a mechanical zoo; marionette show by Jean Gros' marionettes (admission, 10 cents); children's restaurant; "American Flyer" trains (admission, 10 cents); playgrounds and playrooms with up-to-date equipment (admission, 10 cents); a miniature farm, with only young animals in it; Monkey Island; small automobiles which children can drive (fare, 10 cents); nursery and kindergarten; a house built of marbles; miniature railway (fare, adults 10 cents, children 5 cents); Children's Bazaar, containing work done by children all over the world; corral, with ponies to ride (per ride, 5 cents); Kiddies' Circus (admission, adults 10 cents, children 5 cents); a ferris wheel, whip, merry-go-round, and Zeppelin ride (each, 5 cents); motor boats for children (fare, 5 cents); a toy shop; privet hedge maze.

Nurses and attendants are provided to look after children left on Enchanted Island by their parents. Regular conducted tours of the island scheduled to take two hours, guarantee amusement of the children. Lost children are brought to the island.

The World a Million Years Ago

Admission: adults 25 cents, children 10 cents

LOCATION: North of 23rd St. entrance, on the shore of the South Lagoon. Under the large dome which comprises the building is housed a collection of motor-animated life-size models of prehistoric animals and humans. A moving concourse carries visitors past all the exhibits.

SOME OF THE MONSTERS: Evolution of man, including examples of the Java apeman, Pittdown, Neanderthal, and Cro-Magnon types; gorilla, sabre-toothed tiger, giant ape, mammoth, giant sloth, pterodactyl, brontosaurus, dinosaur.

Firestone Building

Admission free

Architect: Burnham Bros.

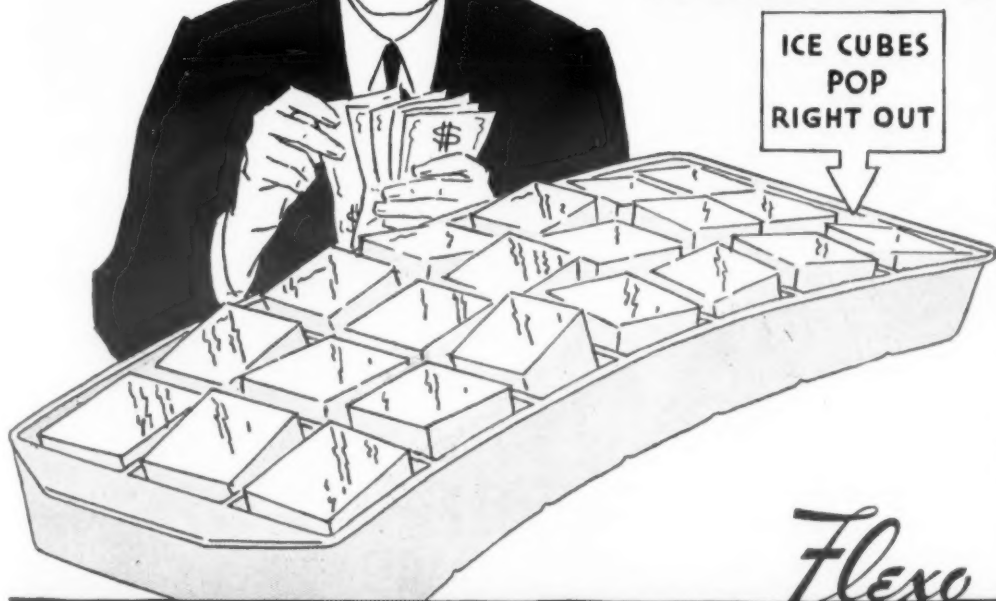
Includes a miniature tire factory and exhibits of Firestone products. LOCATION: Across the end of Lief Ericson drive opposite the Hall of Science, near the 23rd St. entrance.

EXHIBITS: Model tire factory in production; tire-testing machine; large spark plug which opens up to show its construction; batteries in operation while frozen in a cake of ice; first racing car to win the Indianapolis race equipped with Firestone tires, together with this year's winner; the Tiffany silver cup won three times at Indianapolis by Harry Hartz.

BILL FINDS AN UNEXPECTED PROSPECT



Flexible Rubber Trays Are Money Makers In More Ways Than One



YOU CAN'T CALL A REFRIGERATOR "MODERN" UNLESS IT'S EQUIPPED WITH THEM

Flexible Rubber Trays and Grids have become so amazingly popular that in the past three years, 2,000,000 of them have been sold!

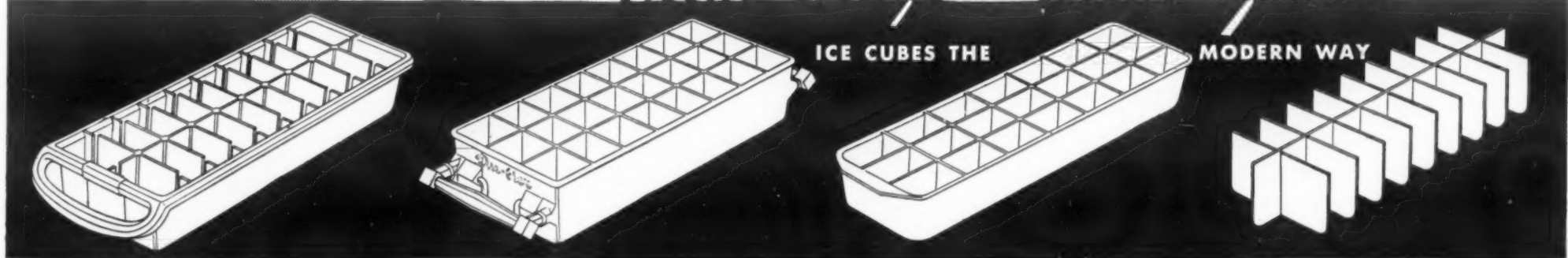
Quick to sense buying trends, all leading refrigerator manufacturers now use them as standard equipment. And every day more manufacturers are falling in line and getting in step.

Today no refrigerator can be called really modern without the ice cube convenience of these time and trouble savers. And it's up-to-the-minute devices

like these that help make sales. Talk to any dealer or salesman who features them. He'll tell you they're wonderful "door openers"—they sell quickly and easily—and often Flexible Rubber Trays and Grids clinch a refrigerator sale that otherwise might be lost.

Get full details from the manufacturer of your refrigerator. Or write direct to us. Stock Flexible Rubber Trays and Grids at once and start collecting the extra profits they bring so easily. The Inland Manufacturing Company, Dayton, Ohio.

Flexo Trays • Flexo Grids



Quickube tray

The Quickube Tray is made exclusively for Frigidaire. It releases ice cubes instantly—one at a time or a whole trayful—with just a slight pressure at the bottom of the tray.

Duflex tray

The Duflex Tray, made only for General Electric, combines flexibility with rigidity by means of stainless steel reinforcing bars. Cubes are instantly removed at a finger touch.

Flexo tray

The Flexo Tray shown here is a flexible rubber tray, used as standard equipment by Kelvinator, Leonard, Sparks-Withington, Mayflower, Williams, Apex, and many others.

Flexo grid

This newest Inland invention combines fast freezing with easy removal of ice cubes. Flexo grids are now standard equipment on Frigidaire, General Electric and Westinghouse.

BEER COOLING

RUSS DEVELOPS NEW DRAFT BEER CONTROL

CLEVELAND—"Beer Control," a new high pressure system for the cooling and drawing of draft beer, is announced by the Russ Soda Fountain Co. of this city, and is now being furnished with all types of Russ beer-dispensing equipment.

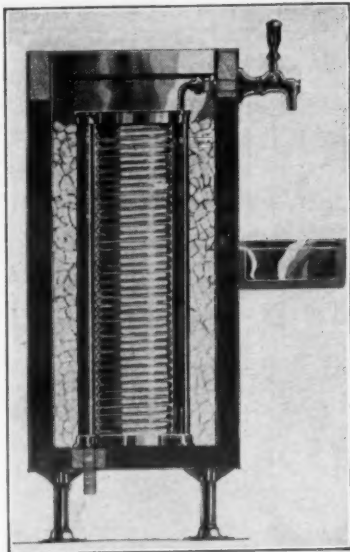
This system permits the maintenance of the high pressure in the keg, thereby preventing the escape of the original natural carbonation and preserving the brewed-in quality of the beer, Russ engineers claim.

In the brewing of beer, fermentation creates natural malt-flavored carbonic gas which gives life and sparkle to the brew. The gas remains in solution as long as the temperature of the beer remains low, but a rise in temperature, or agitation, drives it out.

The escape of gas from solution creates a pressure in the keg depending in amount on the temperature rise or agitation which has taken place. For example, at 65° the beer is under approximately 29 lbs. of pressure, Russ men explain.

Ordinary practice calls for just enough pressure at the pump to force the beer out and through the coils. This pressure is usually in the neighborhood of 15 lbs. Tapping the keg at a less pressure than that existing inside the keg causes an immediate loss of carbonic gas and consequent lessening of the "pep" of the beer. As more liquid is drawn off, more gas escapes and the beer becomes flat.

Heretofore the use of high pressure has resulted in excessive foaming at the faucets. The Russ "Beer Control" system illustrated here, through the use of special coils, is said to correct this condition, making it possible to use either gas or air pressure in ex-

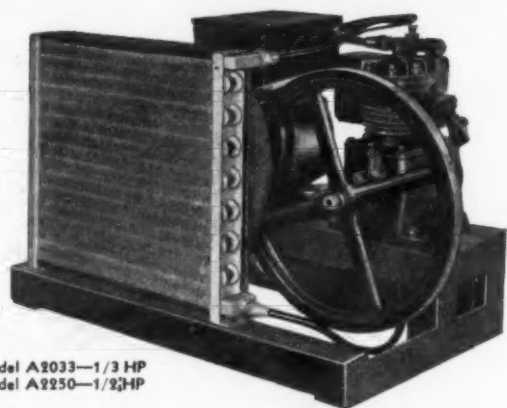


The new Russ system is designed to balance the pressure and temperature of beer in the kegs.

cess of the pressure in the keg. Thus the beer drawn has all of the original carbonic gas.

Ordinary foam is caused by an unbalanced relationship between the pressure and temperature, which drives out the gas and produces a light, frothy foam full of live air bubbles. This foam disappears quickly, usually making it necessary for the bartender to "top" the glass several times. Otherwise the glass will be only about half full of solid beer.

"Beer Control," it is said, enables the dispenser to fill the glass exactly full with one draw by balancing the pressure and the temperature.



Model A2033—1/3 HP
Model A2250—1/2 HP

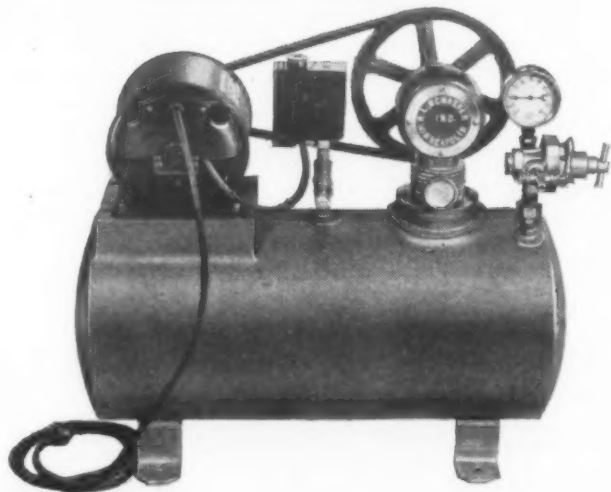
Manufactured by
PARKER MANUFACTURING CO.
2625 Santa Fe Ave., Los Angeles, Calif.

"FROSKIST" BEER UNITS

WRITE FOR QUANTITY PRICE ON Model A1425 1-4 HP UNIT FOR NOVELTY CABINETS

ALL SIZES 1-6 HP to 5 HP Methyl-Ammonia

SCHAEFER'S OILLESS BEER PUMP



A radical departure from the conventional air compressor. This pump was designed for beer pressure work and will give years of satisfactory automatic service.

A ready market awaits the live distributor. Write for prices and discounts.

Manufactured by
HAROLD L. SCHAEFER, INC.
1620 Harmon Place
Minneapolis

Minnesota

CIRCULATION HELPS SWEET WATER BATH SYSTEM OF COOLING

CHICAGO—When installing electric refrigeration equipment to cool beer in conventional coil boxes, the refrigeration coils should be located so as to set up convection currents in the water, according to M. P. Fugle of the Commercial Coil and Refrigeration Co.

Thus, if the refrigeration coil or evaporators is installed in the bottom of the bath, and the block tin beer coil is placed above the evaporator, the colder water will rise and the warmer water will take its place, due to the fact that water is most dense at 39.1° F. and changes in density from this point will create circulation.

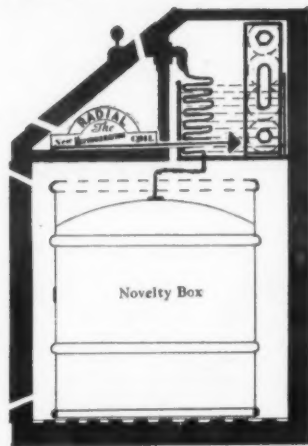
Paraffin Solutions

Where changes in construction of the beer dispenser is not warranted to secure the above effect, Mr. Fugle has found that a solution of paraffin oil or 20 per cent of glycerine in water will give a constant beer temperature to suit the taste of customers.

By using a solution of this kind, the heat transfer is improved, and the ice formation is eliminated from the evaporator, he points out.

When making this type of installation it is necessary to insulate the water lines to prevent them from freezing up from the lowered temperature of the water bath, he warns. He

Novelty Box Cooling



Installation of a refrigeration coil to cool both draft arm and keg compartments, as described below by Mr. Fugle.

has developed a specially insulated water coil for his company to furnish in such instances.

The illustration above shows an end elevation of a typical novelty box installation with one coil cooling the barrel compartment as well as the block tin coil in the water bath. The water bath is from 8 to 10 in. wide, 5 in. high, and extends the full length of the keg compartment.

Parallel Coils

The coil is installed half submerged and half extending approximately 5 in. above the water bath. The block tin coil is parallel to the refrigeration coil along the full length of the pan, allowing a clearance of 2 in. on the back wall to provide for circulation of air to the keg compartment below, Mr. Fugle explains.

Detroit Lubricator's thermostatic valves are used, expanding refrigerant into the lower half of the coil. This permits operation on a defrosting cycle, Mr. Fugle declares, as a 2 to 3-in. thickness of ice can be maintained.

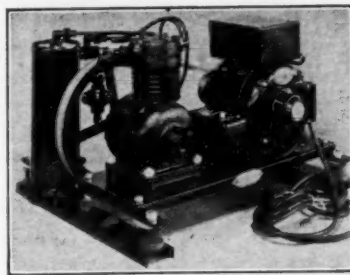
Sample Cylinder Used To Close Sale

GRAND RAPIDS, Mich.—A sample Westinghouse compressor cylinder and pistons closed a difficult sale here recently for Jay VanDusen, sales manager of Hager Music House, Westinghouse refrigerator dealer in this city.

The prospect was a marine engineer, who had objected on four counts to the sales presentation made by the Westinghouse representative. His arguments were that he could buy wholesale from two competitors, that another competing firm would put a cabinet in on trial, that he did not want a hermetically sealed unit because it would be difficult to service, and that he objected to a 3/4-in. piston without rings.

Mr. VanDusen promptly sent to Detroit for a sample cylinder and took it to the engineer's home where he discovered a competitive refrigerator had already been installed on trial. Nevertheless, he demonstrated the Westinghouse mechanism so well that he sold the prospect an AL-73—for cash.

New Beer Pump



New automatic beer pump just announced by Fedders Mfg. Co.

FEDDERS BRINGS OUT FILTERED BEER PUMP

BUFFALO—Supplementing its line of ice and electrically refrigerated beer-dispensing equipment, Fedders Mfg. Co. here has just announced a new electric beer pump featured by an air-filtering attachment which prevents dust and foreign matter from contaminating the beer. The new pump bears the model number of AC-8.

The new Fedders beer pump is operated by a 1/6-hp. motor driving the air compressor with a V-belt. Overall dimensions of the assembly are 13 in. high, 19 1/2 in. wide, and 16 1/2 in. deep.

A small air reservoir is provided with the pump to provide air pressure storage, and a trap to catch any possible condensate. There is no necessity for a large air tank for beer pumping service because the beer kegs themselves provide ample space for reserve air storage space, Fedders engineers declare.

The pump has an adjustable pressure control which starts and stops the motor automatically, and can be set to hold any desired pressure from 1 to 50 lbs. per sq. in. The pump can be plugged into any standard base plug or light socket.

AIR SPECIALTIES DESIGNS BEER PUMPS & FITTINGS

CHICAGO—Air Specialties Mfg. Co., air compressor manufacturer of this city, has just introduced a new model 250 "Aristocrat" electric beer pump listing at \$42.50. The company is also offering the beer-dispensing trade a full line of bronze beer and water faucets, tapping tubes, brass air cocks, sockets, couplings, and tank fittings.

The beer pump occupies a space 8 by 24 by 16 in. high, including its vertical round air reservoir. The reservoir is of steel with a convex head and a concave bottom. The one-cylinder compressor is direct-driven by a 1/8-hp. motor. The compressor has a ground piston and rings, and a cast bronze connecting rod. Intake and discharge valves are rust-proof, designers claim. Rating of the pump is three gallons of beer per minute.

The pump is mounted on rubber cushions, and does not have to be bolted down, the announcement states. It is furnished complete with a line pressure gauge, pop safety valve, and electric cord and plug.

No oil separator is used with the machine, all working parts of the compressor being fed by one wick oiler. The crankcase is operated dry.

LARKIN BOTTLED BEER COIL

A New Sales Aid

THE new LARKIN Bottled Beer Coil cools the bottles to any desired temperature. Made in units holding one case of twenty-four bottles or multiples. A bell top on the sleeves keeps labels from being torn.

WAREHOUSES
Brooklyn - Chicago

LARKIN COILS

LARKIN INTRODUCING BOTTLE BEER COILS

ATLANTA—A new refrigeration coil especially built for bottled beer has been developed by the Larkin Refrigerating Corp. of this city.

The new coil is fitted with brass spring sleeves so that any standard size bottle is held in constant contact with the coils and is at the same time in an accessible position for the beer retailer.

The new coil eliminates the necessity of submerging the bottles in a cold water bath. A special bell cap on the sleeve of the Larkin bottled beer coil avoids scraping the label.

The bottles come out of the coil with only a slight condensation on them. The coil is thermostatically controlled. The coil is sold in units holding a case of 24 bottles or larger.

SAYLOR-BEALL PUMP TAKES IN AIR AT TOP

DETROIT—To avoid drawing in air from the crankcase of the new beer pump just announced by Saylor-Beall Mfg. Co. here, designers of the pump have devised an air intake on the top of the compressor. The pump draws in air through a felt filter on the top of the compressor, and discharges it into a storage tank between the pump and the motor.

Saylor-Beall beer pumps are made in three sizes. Smallest is model 810-K for the average service bar with from one to four taps. Standard equipment includes a 1/4-hp. General Electric motor operating the pump at a speed of 480 r.p.m. to give a piston displacement of 1.53 cu. ft. of air per minute. A two-gallon storage tank is provided with this model. Overall dimensions of the pump are 13 in. high, 9 1/2 in. wide, by 21 1/2 in. long.

Next model is for dispensing from four, five, or six beer taps. This pump has an 11-gal. horizontal air storage tank over which the compressor-motor assembly is mounted. It is powered by a 1/4-hp. General Electric motor driving the compressor at a speed of 480 r.p.m. Piston displacement is 1.53 cu. ft. of air per minute. Dimensions are 27 1/2 in. high, 13 in. wide, by 25 in. long.

Largest model is designed to serve from five to ten beer taps constantly, with the same specifications as the next smaller model, but a compressor running at 700 r.p.m. to give a displacement of 2.23 cu. ft. per minute.

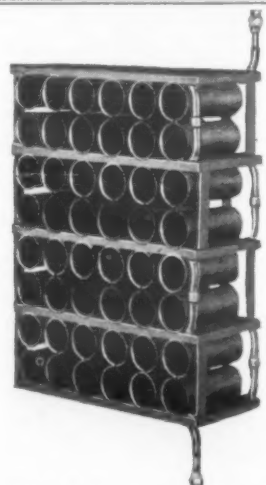
All three pumps are equipped with regulating valves made by Saylor-Beall, Penn pressure switches, tank and air supply indicating gauges. Pressure in the storage tanks is automatically maintained between 30 and 45 lbs.

SEEGER BEER COOLERS TO HAVE PORCELAIN SINKS

ST. PAUL, Minn.—Seeger beer cooling and dispensing cabinets are now being fitted with white porcelain sinks, according to an announcement recently made to distributors of Seeger equipment by J. J. Leonard, sales manager.

Seeger officials believe they are among the first to use porcelain as a trim for beer dispensers.

Faucets, top bar drain plate, locks and hinges will have a chromium finish, Mr. Leonard also announced.



New detailed literature and prices are available on request. Send for it at once and get those added sales made possible with this new Coil.

LARKIN
Refrigerating Corporation
Originator and
Manufacturers
ATLANTA, GA., U.S.A.
U.S. PATENT No. 1,774,338

WESTINGHOUSE ADDS ZEST TO CAMPAIGN

MANSFIELD, Ohio—As a means of intensifying activity on the part of its selling organization during the Master Builders campaign, refrigeration division of Westinghouse Electric & Mfg. Co. has instituted inter-distributor contests, and Westinghouse dealers and salesmen in many localities are competing with others of their own classification.

Winner of each pair of contesting distributors will receive a plaque from R. C. Cosgrove, manager of the refrigeration division. Many distributors are offering special prizes to dealers and salesmen in addition to official awards for the national contest.

Times Appliance Co., distributor in Albany, N. Y., is offering loving cups to winners of its inter-dealer contest, as is the Electric Equipment Corp., Newark distributor, and the Moore-Handley Hardware Co. of Birmingham, Ala. Salesman of the Westinghouse Electric & Supply Co. in Raleigh, N. C., who sells the most refrigerators during "Double Effort" week will receive a radio set.

John Boos, Jr., of Wesco in St. Louis has started a contest for dealers and another for the distributorship's wholesale salesmen. The distributing organization in Milwaukee, under Henry Czech, also is launching inter-dealer competitions.

Wholesale salesmen for the Westinghouse Electric Supply Co. in North and South Carolina, Georgia, and Florida are competing for gold watches offered by C. W. Dustin, district manager. Dealers of Milwaukee's Wisconsin Sales & Supply Co. have been matched with each other by R. W. Barbour.

In Richmond, Va., both dealers and wholesale salesmen are working for special merchandise and cash prizes offered by the management of Westinghouse Electric Supply Co. there. I. DeHart, Connecticut Electric Refrigerating Co. of New Haven, has his larger dealers competing for loving cups, and the small dealers for cash prizes based on percentage of quota attained.

High-ranking dealer of Westinghouse Electric Supply Co. in Baltimore will receive a plaque, while the winning wholesale salesman will be awarded a \$10 hat. Dealers of Wesco in Charlotte have been paired in special contests by Austin Emerson, manager there, and dealers of Ray Thomas, Inc., Los Angeles, are also working against each other.

Indianapolis Wesco has matched its dealers against each other for special prizes, and in Washington, D. C.—location of the Edgar Morris Sales Co.—salesmen are working to win a free weekend outing on Chesapeake Bay as the guest of Edgar Morris.

A loving cup is the award being offered the high dealer in the territory of the Penn Electrical Engineering Co. of Scranton, and special prizes are being offered best dealers in the organization of Westinghouse Electric Supply Co. of Rochester, N. Y.

SHELVADOR IS FEATURED IN CROSEY PUBLICATION

CINCINNATI—The Crosley "Shelvador" is featured in the latest edition of the *Crosley Broadcaster*, house organ which is published for Crosley retailers.

This issue contains articles showing how precision standards are applied to cabinet construction, how 30 to 40 per cent of the labor cost is spent on inspections, how tests are run on the Shelvador.

The issue also explains that the Shelvador feature was the idea of the wife of a prominent refrigerating engineer. Several pages of detailed sales helps, and pictures of effective window displays constitute the remainder of the booklet.

Display Truck Used to Show Westinghouse

PASADENA, Calif.—Because he believed actual demonstrations to be the most important part of refrigeration selling, Salesman Roger Williams Brigham of Ray Thomas, Inc., Westinghouse refrigerator dealer here, rigged up his own display truck and now takes his product to the prospect.

His truck is a light Ford, painted white with a linoleum-covered platform on which is mounted a Westinghouse refrigerator. A set of steps enables the prospect to get on the platform for close inspection of the unit, and a floodlight illuminates the refrigerator for night calls.

CIRCUS IS ADVERTISING KELVINATOR PRODUCTS

DETROIT—By special arrangement with Kelvinator Corp., the Downey Bros. circus is cooperating with Kelvinator distributors in advertising Kelvinator household refrigerators, according to factory officials.

Porcelain Enamel on Parade at the Fair



Exhibit of the Porcelain Enamel Institute in the General Exhibits Building.

Maybe We Should Visit An Oculist

Porcelain Enamel Institute
Chicago

July 22, 1933.

Editor:

We are just a little bit disturbed over the fact that in your recommendations as to "What to See" at A Century of Progress Exposition on page 2 of the July 19th issue, you neglected to make any mention of the fact that Crosley, Frigidaire, General Electric, Majestic and Norge refrigerators are on display in the Porcelain Enamel Parade.

As we have notified you from time to time, this exhibit is located in the second wing of the General Exhibits building. Under the caption, "General Exhibits Group," in your column in the July 19th issue you recommend a number of things in Pavilion No. 2 of this building. One of them is the Chicago Camera Club, which happens to be right across the aisle from our exhibit.

We do not think this is necessarily a discrimination; however, the next time you walk down that aisle, I hope you will cast your eyes to the east and also follow the exhibit around to the end. It would seem to us that these refrigerators, not to mention our educational exhibit, where porcelain enamel is applied, would be of some interest to your readers.

GEORGE P. MCKNIGHT,
Secretary.

Porcelain Enamel Institute, Inc.
612 No. Michigan Ave., Chicago, Ill.
August 4, 1933.

Editor:

Permit me to thank you for your kind letter of August 3rd relative to the Porcelain Enamel Parade.

Please accept my sincere thanks for what you are doing to rectify the omission of any mention of this exhibit, and at the same time you have my congratulations for the excellent job you and ELECTRIC REFRIGERATION NEWS are doing.

GEORGE P. MCKNIGHT,
Secretary.

Westinghouse Retailers Win Contest

NEWARK, Ohio—Westinghouse retailers in this territory recently won first, second, and third places in an electric refrigeration sales contest sponsored by the Ohio Power Co. of this city.

First prize went to Ralph P. Lahm, representing the Slator & Lieser Co. of New Philadelphia, Ohio, who sold 45 Westinghouse refrigerators in 10 weeks. Second and third places were won by J. A. Godfrey of Dover, and the Fountain Co., dealership in Coshocton.

Blind Man Purchases Frigidaire at Fair

CHICAGO—Although B. F. Bower of Buffalo is totally blind, he acquainted himself with Frigidaire features by means of his fingertips when he visited the Frigidaire exhibit at A Century of Progress on Aug. 3.

Mr. Bower ran his fingers over the porcelain, the shelves, the Quickube ice trays, and the World's Fair medalion which is placed on every Frigidaire sold at the exposition. Then he asked for an order blank and signed.

SALES PROMOTION CATALOG

DETROIT—A catalog illustrating and describing all advertising and sales promotional materials now available for Norge distributors and dealers has just been issued by Norge Corp.

ALDRICH MADE DIRECTOR OF WESTINGHOUSE

EAST PITTSBURGH—Winthrop W. Aldrich, president of Chase National Bank, was elected a director of Westinghouse Electric & Mfg. Co. at a recent meeting of the board.

In addition to the directorship to which he was elected, Mr. Aldrich is a director of Chase National Bank, American Telephone & Telegraph Co., American Express Co., Discount Corp., Rockefeller Center, Inc.

Belsey Co. Celebrates Birthday at Resort

LOS ANGELES—By way of celebrating the close of the General Electric Man Hunt sales contest and the "birthday" of the George Belsey Co., Ltd., G-E distributor here, 120 dealers and salesmen of the organization were guests of Mr. Belsey for a week-end at Lake Arrowhead recently. Golf, tennis, horse shoe pitching, and fishing entertained quota-making guests.

NORGE CORP. ISSUES BOOK FOR SALESMEN

DETROIT—Primarily for the use of salesmen, a little book, "The Story of Norge," has been prepared by Norge Corp.'s advertising and sales promotion department to give those men a history of Norge development and an outline of the refrigerator's features—in short, to give them a thorough understanding of the product they sell.

The book's 28 pages are made up entirely of excerpts from speeches made to Norge salesmen by Howard E. Blood, president of the company. As might be expected, the "story of Norge" is in many ways told as an engineer would tell it—with greatest emphasis placed on mechanical characteristics of Norge units and cabinets.

Having related how the Norge rollator was discovered and developed, Maj. Blood takes the Norge refrigerator apart, figuratively speaking, and explains to each salesman-reader in everyday English what there is good about it and why.

This task done, he turns salesman himself, and calls to attention a dozen different ways in which Norge salesmen may present their product as one built to answer housewives' needs.

WESTINGHOUSE REPORTS ON ADVERTISING

MANSFIELD, Ohio—During April, May, and June of this year, Westinghouse electric refrigerator dealers used a total of 20,000,000 lines of newspaper advertising, according to an estimate released by the Westinghouse refrigeration division here. Officials of the division estimate that this lineage presented in excess of 100,000,000 advertising impressions.

Liquid Bar in Oriental Walnut Panels. Marble Base and Mahogany Top—Choice of Sizes



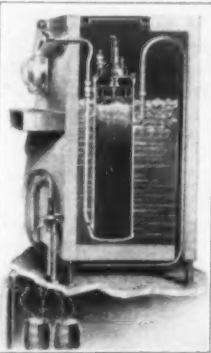
A Quality Line for the Active Beer Market

The current beer situation leaves no doubt about the great popular demand. It will be a big task to equip new retail outlets for months to come.

In addition, many who set up hastily selected dispensing equipment in the beginning, now know its limitations. They know, from experience with makeshifts, just what they want. To these the Liquid Line will make a great appeal.

Here is an opportunity for those distributors to tie in with a complete line—probably the most widely and favorably known in the country. There is a dispensing unit, mechanically refrigerated or direct-iced, for installations of any size. From long, close contact with every dispensing need a full assortment of accessories has been built up.

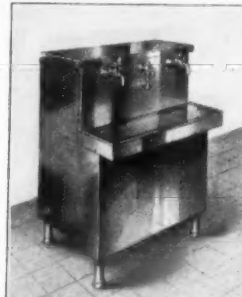
In the "Liquid" Line you will find all you need to extend your business into this remarkably active field for new profit.



LIQUID-ZAHM Controlled Pressure Beer Drawing System

WRITE FOR 64 PAGE CATALOG ON The Complete Line of "LIQUID" BEER DRAWING EQUIPMENT

The LIQUID-ZAHM Controlled Pressure BEER DRAWING SYSTEM
Dispensing Units in Wood or Stainless Steel
Beer Coolers—Electric Refrigeration Equipment
Pressure Regulators—Pumps—Air Fittings
Tees—Couplings—Beer Faucets—Tapping Bungs
Block Tin Pipe—Beer Switches
RED DIAMOND CARBONIC GAS
COMPLETE MODERN BARS



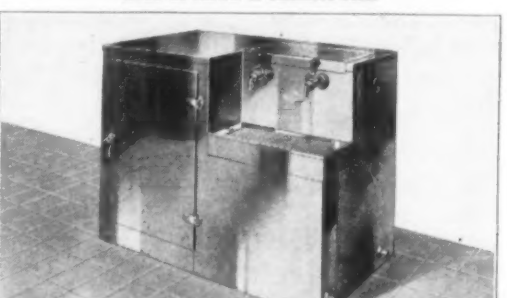
Red Diamond Beer Cooler for Two or Three Coils



Red Diamond Beer Cooler and Dispenser for Four Coils



Red Diamond Beer Service Bar for Two Half-Barrels. Wood (as shown) or Stainless Steel



Red Diamond Beer Service Bar for One Half-Barrel

THE LIQUID CARBONIC CORPORATION

3100 SOUTH KEDZIE AVENUE, CHICAGO, ILLINOIS

CHICAGO SALES ROOM: 619-621 SOUTH WABASH AVENUE

Boston New York Philadelphia Atlanta Jacksonville Pittsburgh New Orleans Detroit Buffalo Cleveland Cincinnati Nashville Memphis
St. Louis Minneapolis Kansas City Dallas Denver Salt Lake City Seattle San Francisco Los Angeles

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry

Published Every Week by

BUSINESS NEWS PUBLISHING CO.

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VOL. 9, No. 15, SERIAL NO. 229, AUGUST 9, 1933

EDITORIAL AIMS

- To encourage the development of the art.
- To promote ethical practices in the business.
- To foster friendly relations throughout the industry.
- To provide a clearing house for new methods and ideas.
- To broadcast the technical, commercial and personal news of the field.

Stormy Weather

PRECIPITATED by a rapid succession of cooling showers, the almost unbearably hot temperatures which have been prevailing dropped last week. In Detroit the citizens again began sleeping under blankets. Prayers for relief turned into sighs of relief. Everybody happy—including electric refrigerator dealers.

Telephone check-ups disclosed the fact that the stormy weather had affected sales of electric refrigerators in the Detroit area, but not as everybody had expected. Sales actually jumped! Almost identical reports have come in from other areas similarly affected by a drop in temperature.

Instead of sales dropping off suddenly when the first cool weather came—as experience had taught dealers they might expect—these men learned to their astonishment that more people than ever were coming in ("it was so hot yesterday we didn't feel like leaving the house") and placing orders.

Following the Weather-Man

Time was when the electric refrigeration sales curve followed almost slavishly the United States Weather Bureau charts. Came a cold week in spring or early summer, and salesmen adjourned to the corner poolroom. No use of trying, they insisted. True, sales generally tapered off in mid-summer, right at the peak of the hot weather; but that, it was said, was because people declared that having gone thus far without electric refrigeration, they might as well wait until next year and start off the hot season with a new refrigerator.

True to form, 1933 began with a highly discouraging first quarter. It was cold, unusually cold. Warm weather began, and came on with a rush. So did sales. Hotter and hotter it became, until new heat marks were established all over the country. In June the industry hung up a new all-time record. Sales managers hugged themselves with delight, but predicted privately that "as soon as it begins to get cooler, business will begin to slump. This can't last."

Peak Season Continues to Extend

As was noted in last week's editorial, many of the industry's leading sales executives figured that sales were due to fall off in August; and devised special campaigns to put extra pressure on the field. Well, August is here, and cooler weather has arrived (perhaps only temporarily, but possibly enough to disprove the contention that sales should necessarily follow the temperature curve). From all indications August will be another banner month. Almost unbelievable that the peak selling season should extend so long, sales managers have averred, and, of course,

they have found it as gratifying as it is surprising.

There's no doubt that confidence engendered in the general populace by the promises of better conditions through President Roosevelt's National Industrial Recovery Act is helping. Also that, as Secretary-Manager G. W. Weston of the Electrical and Radio Association of Kansas City observed in a letter printed on this page last week, people are investing their money in electric refrigerators and automobiles instead of converting it into bank deposits, stocks, bonds, and other forms of investment in which they have lost faith.

Beer has helped, too. Some distributors aver that the advent of beer has helped domestic business more than it has commercial. One highly successful branch manager declares that men will buy electric refrigerators to cool their beer, when before they wouldn't buy them to cool their babies' milk! Proof of this desire for household beer coolers may be had in the unusual demand for the larger sizes of cabinets.

Old Rules No Longer Apply

So, stormy weather or no, people continue to buy refrigerators. The old rules no longer seem to apply. And the veteran salesman who knows all the answers, and who can tell you from experience that there's no use extending yourself during the cold spells, is simply missing one of the best chances he has had to make money in the last several years.

Likewise, the dealer who decides that the refrigeration buying wave has spent its force, and tells his distributor he won't be ordering any more boxes for awhile, is liable to get caught flat-footed, just as great numbers were caught early in the spring when the wave got started.

Poor Time for Vacations

Executives of the Ford Motor Co. have had to revise their vacation plans. The half-month suspension of activities in August which was originally scheduled has been, we understand, abandoned; because August sales and production of Ford motor cars will likely exceed those of July. And it seems altogether likely that the refrigeration industry may have to forget about vacations for awhile. Business is so good that August should be a highly peaceful, enjoyable, and comfortable month for the nation's fish.

All indications point toward a new record for refrigeration sales this year. The wise operators in the business will work unceasingly to get their share of this welcome business.

WHAT OTHERS SAY

STANDARDS FOR INDUSTRY

IT is gratifying to note that the American Standards Association will carry on several functions that are being relinquished by the Bureau of Standards for economy reasons. Howard Coonley, president of the association, has agreed to take over the activities of the divisions of trade standards, specifications, and simplified practice, as well as some activities of the building and housing division and the safety code section. The work of standardization in American industry is not to be dropped, but is transferred from a government bureau to a private association.

The American Standards Association is a federation of 37 national technical societies, trade associations, and governmental bodies. It was organized in 1918 to serve as a clearing house through which the standardization work of technical and industrial groups could be correlated. Since that time it has performed notable service by preventing duplication of work in this line and by eliminating conflicting standards. Its work is carried on by 400 standardization committees on which 3,000 technical experts serve as members. The association is supported by those groups which benefit from its activities.

Standardization is not popular so far as tastes, habits, and personality are concerned, but its value when applied to plumbing equipment, ball bearings, gears, bolts and nuts, machine tools, and railroad signals is not open to question. It is estimated, for example, that the work which the Bureau of Standards is discontinuing has resulted in savings of \$200,000,000 for the lumber industry. When all industries operating in the same field conform to simple standards the market of each is broadened, the public is given better service at less cost, and future planning and financing are simplified. Retail dealers are able to carry more complete lines of goods under standardized practices.

The Bureau of Standards was a pioneer in this field. It has rendered highly valuable service to industry as well as to the public. While fully cognizant of this service, industry now desires to carry on this work in its own way. There is some fear that political control might be exercised in the future if these activities should be left to a government agency. Industry appears willing to undertake the full responsibility of shaping its own standards, and there is no reason why it should not do so.—Washington, D. C., Post, July 21, 1933.

LETTERS

Electrolux in the Hall of Science

Electrolux Refrigerator Sales, Inc.
51 East 42nd St., New York City
July 31, 1933.

F. M. Cockrell, publisher:

With reference to the various letters appearing on page 11 of your July 26 issue, which deal with the controversy started by the distorted advertising of Grunow, will advise that we do not care to enter into this controversy but would state that in the particular building; that is, the Hall of Science, there are three Electrolux refrigerators in operation.

1. A new air-cooled Electrolux refrigerator is in operation at the Emergency Hospital.

2. There is an additional display cabinet with glass doors, used for the storage of serums.

3. There is also an air-cooled Electrolux in operation in the model kitchen of the Union Carbide and Carbon Corp., which is located in the south end of the Hall of Science.

We do not claim receiving any first honors, but you can readily see that three of our pieces of equipment are rendering important service within this building.

F. E. SELLMAN,
Vice president.

Out Into the Open

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.
Aug. 1, 1933.

F. M. Cockrell, publisher:

In connection with the much discussed Grunow advertising, please note that attached copies of letters from C. W. Fitch, Director of Exhibits for the Century of Progress, to our Mr. E. H. Sniffin and to The Grunow Corp.

While your editorial intimates that people who really count are not likely to be misled by such advertising, our knowledge of this particular situation would lead us to believe otherwise. True, the competitive manufacturers are not misled but unfortunately many of their dealers who have no means of knowing the true facts are misled, particularly when Mr. and Mrs. John Public are influenced to buy the falsely represented products on the strength of the advertising claims made for them.

This is the sort of thing which discredits advertising and makes it difficult for honest advertisers to get their money's worth. I think you are to be commended for bringing this out into the open.

RALPH LEAVENWORTH,
General advertising manager.

Modest Mr. Grunow

Liberty Refrigeration Corp.
Factory and General Offices:
237 Georgia Ave.
Providence, Rhode Island
Aug. 1, 1933.

Editor:

I have followed with a great deal of interest and considerable amusement the controversy between Grunow and the rest of the refrigeration field, under the "Century of Progress" advertisement in the June 21st issue of the News.

In these days of far-fetched superlatives in the advertising of the tobacco, gasoline, cosmetic, and other industries a thorough reading of the advertisement, supplemented by Duane Wanamaker's letter of July 18, makes me feel that for once Grunow was very modest.

After all, as Crosley says of their Sheldor, "Wouldn't we be embarrassed if someone else had thought of it first?"

And again—What would it have cost Grunow for the equivalent amount of publicity and advertising which they have received gratis as a result of the controversy?

J. H. READIO, JR.,
General Manager.

In re Electro-Kold

Electro-Kold
E. S. Matthews, Inc.
Spokane, Wash.
July 31, 1933.

Editor:

It will be of interest to you to know for your columns that the firm of E. S. Matthews, Inc., are continuing as successors to the former Electro-Kold Corp. of this city as manufacturers of Electro-Kold refrigeration for household, commercial, and apartment purposes.

The Electro-Kold Corp. formerly conducted an extensive manufacturing and wholesaling of electric refrigeration throughout the eleven western states. E. S. Matthews, Inc., are continuing parts manufacturing for all Electro-Kold machines distributed throughout the area formerly covered by the Electro-Kold Corp.

However, the activities of the new concern are chiefly confined to the manufacturing for distribution through

retail departments, that in Spokane, and that in Seattle.

The results this year from the localization of its business have been exceedingly satisfactory and have put the firm on a sound paying basis. All former Electro-Kold dealers or users are advised to get in touch with this company for any parts for Electro-Kold machines in their territory as we keep at all times a large stock of parts for every model the Electro-Kold Corp. formerly manufactured.

The present concern is composed of E. S. Matthews, president and treasurer; D. W. Mather, vice president. The general offices and factory as well as the retail department for the Spokane district are located at 151 Post Street, Spokane; and N. J. Brennan is in charge of the Seattle factory retail branch at 2214 Fourth Ave., Seattle.

E. S. MATTHEWS,
President.

Technical Standards

American Standards Association
29 West Thirty-Ninth St.,
New York City

Editor:

The announcement by Secretary of Commerce Roper that the simplified practice and industrial standardization work of the Bureau of Standards will be turned over to the American Standards Association has aroused many questions concerning the continuation of this work among groups which have participated in activities of the Bureau.

I am pleased to be able to state that provision is being made for assuring continuity on the technical projects. A skeleton staff to be maintained in the discontinued divisions and sections of the Bureau during a transition period will greatly facilitate the transfer.

Individual projects in standardization and simplification can be carried on without any essential change in method. Plans are now being made for obtaining greater financial support for the ASA, and when this is accomplished, it is hoped that the ASA may be able to take over a number of the Bureau's personnel.

It is the belief of Secretary Roper, as well as myself, that this transfer will have far-reaching consequences for every branch of American industry concerned with standardization. The effect of the Secretary's decision is to concentrate the responsibility in a single organization representative of industry, the public, and the government. The consolidation of functions in the hands of a single organization is especially important since it comes at a time when the national economy demands a sharp acceleration in standards-making to keep pace with the need for industrial agreements under the National Recovery Act.

We feel that this work is vital to American industry—that the possibilities for joint action opened up by the National Recovery Act will be greatly broadened if industrial and other groups can cooperate in the establishment of a comprehensive system of fundamental technical standards; and we are happy to offer to all of these groups the machinery of the American Standards Association and the Bureau of Standards—now welded into a single unit.

HOWARD COONLEY,
President.

Likes Rotogravure

Wrightsville, Pa.
July 28, 1933.

Editor:

The rotogravure section was sure fine.

I would suggest that you use this medium for following up your articles on mass production houses, and show pictures of the houses being exhibited at the Chicago fair along with layouts of their floor plans and room arrangement. This would prove extremely interesting to those readers who are unfamiliar with the new thoughts in house design and would prove a valuable collection for every interested reader.

In your discussions of companion merchandise and other items, I notice that household incinerators are almost missing, yet I believe this item is important as a saleable product and should be in demand.

P. B. MOORE.

10 More Years

"I'll want News at least 10 more years, so never cut me off. Just send invoice. Thanks."—W. J. Nickel, Kansas Gas & Electric Co., 521 S. 12th St., Independence, Kan.

'I Want to See More News About'

"Service."—M. W. Porter, High St., Sharon, Mass.

"Mechanical construction of new units described."—David Dasso, 50 Church St., New York City.

"How to get dealers. How to sell department stores, furniture stores, etc."—A. Seidensticker, Jr., 700 Lincoln Dr., Mt. Airy Sta., Philadelphia.

Text of Nema Code Which Will be Made Effective Aug. 14

To effectuate the policy of Title I of the National Industrial Recovery Act, the following provisions are established as a National Industrial Recovery Code for the Electrical Manufacturing Industry:

I. DEFINITIONS: The term "electrical manufacturing industry" as used herein is defined to mean the manufacture for sale of electrical apparatus, appliances, material or supplies, and such other electrical or allied products as are natural affiliates. The term "person" as used herein shall include natural persons, partnerships, associations, trusts, trustees, trustees in bankruptcy, receivers, and corporations. The term "employer" as used herein shall include every person promoting, or actively engaged in, the manufacture for sale of the products of the electrical manufacturing industry as herein defined, provided, however, that organizations or groups of employers representing a substantial part of any branch or subdivision of the industry may be exempted by the Administrator from the provisions of this code. The term "effective date" as used herein is defined to be the eleventh day after this code shall have been approved by the President of the United States.

COLLECTIVE BARGAINING

II. As required by Section 7(a) of Title I of the National Industrial Recovery Act, the following provisions are conditions of this Code:

(1) That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from the interference, restraint, or coercion of employers of labor, or their agents, in the designation of such representatives or in self-organization or in other concerted activities for the purpose of collective bargaining or other mutual aid or protection; (2) that no employee and no one seeking employment shall be required as a condition of employment to join any company union or to refrain from joining, organizing, or assisting a labor organization of his own choosing; and (3) that employers shall comply with the maximum hours of labor, minimum rates of pay, and other conditions of employment, approved or prescribed by the President."

40-CENT MINIMUM WAGE

III. (a) On and after the effective date employers shall not employ anyone under the age of 16 years.

(b) On and after the effective date the minimum wage that shall be paid by any employer to any employee engaged in the processing of products of the electrical manufacturing industry and in labor operations directly incident thereto shall be 40 cents per hour, unless the rate per hour for the same class of labor was on July 15, 1929, less than 40 cents, in which case the rate per hour paid shall be not less than the rate per hour paid on July 15, 1929, but in no event shall the rate per hour be less than 32 cents per hour, and provided, also, that learners may be paid not less than 80 per cent of the minimum rate paid determined in the manner above provided, but the number of learners receiving less than such minimum rate so determined shall not exceed 5 per cent of the total number of employees engaged in the processing of products and in labor operations directly incident thereto.

(c) On and after the effective date the minimum wage that shall be paid by any employer to all other employees, except commission salespeople, shall be at the rate of \$15 per week; provided, however, that office boys or girls and learners may be paid not less than 80 per cent of such minimum wage, but the number of such office boys or girls, and learners paid at a rate of less than \$15 per week shall not exceed 5 per cent of the total number of employees covered by the provisions of this paragraph (c).

(d) The minimum rate of wages provided in this Article shall apply to all employees in all localities unless the Administrator or his representative shall fix a lower rate for particular localities.

(e) Not later than ninety (90) days after the effective date the electrical manufacturing industry shall report to the Administrator through the Board of Governors of National Electrical Manufacturers Association the action taken by all employers in adjusting the hourly wage rates for all employees receiving more than the minimum rates provided in paragraph (b) of this Article.

36- & 40-HOUR WEEK

IV. On and after the effective date employers shall not operate on a schedule of hours:

(a) For employees engaged in the processing of products of the electrical manufacturing industry, and in labor operations directly incident thereto, in excess of 36 hours per week.

(b) For all other employees, except executives, administrative and supervisory employees, and traveling and commission salespeople, in excess of 40 hours per week.

Provided, however, that these limitations shall not apply to those branches of the electrical manufacturing industry in which seasonal or peak demand places an unusual and temporary burden upon such branches; in such cases such number of hours may be worked as are required by the necessities of the situation, but at the end of each calendar month every employer shall report to the Administrator through the Board of Governors of National Electrical Manufacturers Association, in such detail as may be required, the number of man hours worked in that month on account of seasonal or peak demand requirements, and the ratio which said man hours bear to the total number of man hours of labor during said month; and

Provided, further, that these limitations shall not apply in cases of emergency, but at the end of each calendar month every employer shall report to the supervisory agency, hereinafter provided for, in such detail as may be required, the number of man hours worked in that month for emergency reasons and the ratio which said emergency man hours bear to the total number of man hours of labor during said month.

NEMA ADMINISTERS CODE

V. National Electrical Manufacturers Association is hereby designated the agency for administering, supervising, and promoting the performance of the provisions of this code by the members of the electrical manufacturing industry.

With a view to keeping the President of the United States and the Administrator informed as to the observance or non-observance of this Code and as to whether the electrical manufacturing industry is taking appropriate steps to effectuate in all respects the declared policy of the National Industrial Recovery Act, each employer shall, not less than once in each year, prepare and file with the Board of Governors or the Executive Committee of the National Electrical Manufacturers Association an earnings statement and balance sheet in a form approved by said Board of Governors or said Executive Committee or in a form acceptable to any recognized stock exchange. Each employer shall likewise prepare and file with such person or organization as the Board of Governors or the Executive Committee of National Electrical Manufacturers Association may designate and at such times and in such manner as may be prescribed, statistics of plant capacity, volume of production, volume of sales in units and dollars, orders received, unfilled orders, stocks on hand, inventory, both raw and finished, number of employees, wage rates, employee earnings, hours of work, and such other data or information as the Board of Governors or the Executive Committee of National Electrical Manufacturers Association may from time to time require.

CONFIDENTIAL DATA

VI. Except as otherwise provided in the National Industrial Recovery Act all statistics, data and information filed in accordance with the provisions of Article V shall be confidential, and the statistics, data and information of one employer shall not be revealed to any other employer except that for the purpose of facilitating the administration and enforcement of the provisions of this code, the Board of Governors or the Executive Committee of National Electrical Manufacturers Association, by their duly authorized representatives (who shall not be in the employ of any employer affected by this code), shall have access to any and all statistics, data and information that may be furnished in accordance with the provisions of this code.

COST DISTRIBUTION

VII. Any employer may participate in any endeavors of National Electrical Manufacturers Association in the preparation of any revisions of, or additions or supplements to, this code by accepting the proper pro rata share of the cost and responsibility of creating and administering it, either by becoming a member of National Electrical Manufacturers Association or by paying to it an amount equal to the dues from time to time provided to be paid by a member in like situation of National Electrical Manufacturers Association.

ACCOUNTING SYSTEM

VIII. Every employer shall use an accounting system which conforms to the principles of and is at least as detailed and complete as the uniform

and standard method of accounting set forth in the Sixth Edition of the Manual of Accounting, prepared and published by the National Electrical Manufacturers Association, and a costing system which conforms to the principles of and is at least as detailed and complete as the standard and uniform method of costing to be formulated or approved by the Board of Governors or Executive Committee of National Electrical Manufacturers Association, with such variations therefrom as may be required by the individual conditions affecting any employers or group of employers and as may be approved by the Board of Governors or the Executive Committee of National Electrical Manufacturers Association or the supervisory agency and made supplements to said Manual of Accounting or method of costing.

MINIMUM PRICE

IX. No employer shall sell or exchange any product of his manufacture at a price or upon such terms or conditions that will result in the customer paying for the goods received less than the cost to the seller, determined in accordance with the uniform and standard method of costing hereinabove prescribed, provided, however, that dropped lines, seconds, or inventories which must be converted into cash to meet emergency needs may be disposed of in such manner and on such terms and conditions as the supervisory agency may approve and as are necessary to move such product into buyers' hands, and provided further that selling below cost in order to meet existing competition on products of equivalent design, character, quality or specifications shall not be deemed a violation of this Article if provision therefor is made in supplemental codes for any branch or subdivision of the industry, which may be hereafter prepared and duly approved by the Administrator.

PRICE LISTS

X. If the supervisory agency determines that in any branch or subdivision of the electrical manufacturing industry it has been the generally recognized practice to sell a specified product on the basis of printed net price lists, or price lists with discount sheets, and fixed terms of payment which are distributed to the trade, each manufacturer of such product shall within ten (10) days after notice of such determination file with the supervisory agency a net price list or a price list and discount sheet as the case may be individually prepared by him showing his current prices, or prices and discounts, and terms of payment, and the supervisory agency shall immediately send copies thereof to all known manufacturers of such specified product. Revised price lists with or without discount sheets may be filed from time to time thereafter with the supervisory agency by any manufacturer of such product, to become effective upon the date specified therein, but such revised price lists and discount sheets shall be filed with the supervisory agency ten days in advance of the effective date, unless the supervisory agency shall authorize a shorter period. Copies of revised price lists and discount sheets, with notice of the effective date specified, shall be immediately sent to all known manufacturers of such product, who thereupon may file, if they so desire, revisions of their price lists and/or discount sheets, which shall become effective upon the date when the revised price list or discount sheet first filed shall go into effect.

If the supervisory agency shall determine that in any branch or subdivision of the electrical manufacturing industry not now selling its product on the basis of price lists with or without discount sheets with fixed terms of payment the distribution or marketing conditions in said branch or subdivision are similar to or the

same as the distribution or marketing conditions in a branch or subdivision of the industry where the use of price lists with or without discount sheets is well recognized, and that a system of selling on net price lists or price lists and discount sheets should be put into effect in such branch or subdivision, each manufacturer of the product or products of such branch or subdivision shall within twenty (20) days after notice of such determination file with the supervisory agency net price lists or price lists and discount sheets as the supervisory agency may direct containing fixed terms of payment showing his prices and discounts and terms of payments, and such price lists and/or discount sheets and terms of payment may be revised in the manner hereinabove provided.

No employer shall sell directly or indirectly by any means whatsoever any product of the industry covered by the provisions of this Article at a price lower or at discounts greater or on more favorable terms of payment than those provided in his current net price lists or price lists and discount sheets.

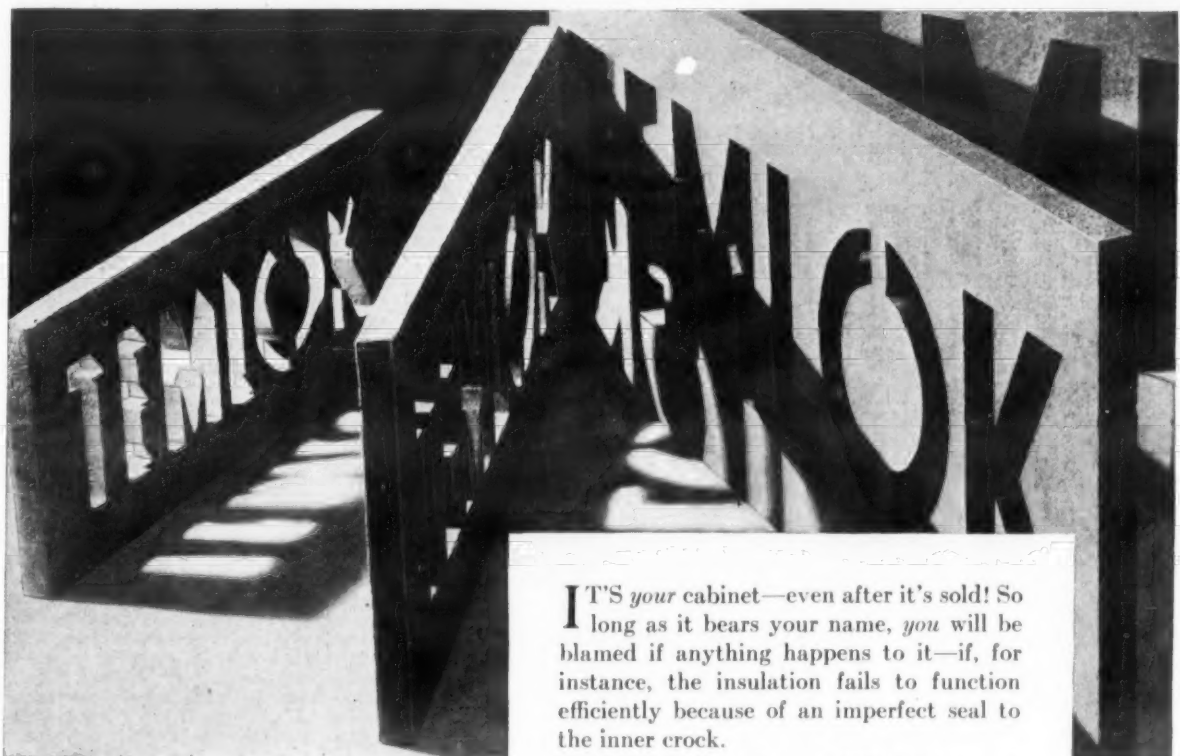
SUBDIVISIONS

XI. Aggregations of employers having a common interest and common problems will be grouped by National Electrical Manufacturers Association for administrative purposes in various subdivisions or product classifications and report of such grouping made to the Administrator.

CONTROL OF SUBDIVISIONS

XII. In each subdivision or product classification there will be a supervisory agency approved or appointed by the Board of Governors or the Executive Committee of National Electrical Manufacturers Association and report thereof made to the Administrator. If

(Concluded on Page 10, Column 1)



IT'S your cabinet—even after it's sold! So long as it bears your name, you will be blamed if anything happens to it—if, for instance, the insulation fails to function efficiently because of an imperfect seal to the inner crock.

Why not cancel that possibility right now? Insulate the cabinets you build with rigid Armstrong's Temlok—and you won't have to worry about loss of efficiency due to air leaks between the insulation and the inner crock. Efficient Temlok fits tight. It can't settle or pack. It keeps right on insulating throughout the life of the cabinet.

Armstrong's Temlok is a highly efficient, low-cost, fibreboard insulation. It is an excellent insulator (its coefficient of thermal conductivity is only .28). It has high resistance to moisture—is odorless and strong. Weight is but .9 lb. per board foot. Best of all, it is backed by the name Armstrong, maker of fine insulating materials for more than thirty years, and known to consumers as the manufacturer of fine linoleum.

Temlok is supplied in factory-fabricated sets, ready for time-saving installation. Let us send you full details and samples. The coupon below will bring them promptly. Armstrong Cork & Insulation Co., 917 Concord Street, Lancaster, Pa.



ARMSTRONG CORK & INSULATION CO.
917 Concord St., Lancaster, Pa.

Please send me complete details regarding Armstrong's Temlok Refrigerator Insulation.

☐ Please send sample.

Name.....

Street.....

City.....

State.....

TEXT OF NEMA CODES SIGNED BY PRESIDENT

(Concluded from Page 9, Column 5)

formal complaint is made to National Electrical Manufacturers Association that the provisions of this code have been violated by any employer, the proper supervisory agency shall investigate the facts and to that end may cause such examination or audit to be made as may be deemed necessary.

PRESIDENT'S PREROGATIVE

XIII. The President may from time to time cancel or modify any order approval, license, rule, or regulation issued under Title I of the National Industrial Recovery Act.

CODE MAY BE MODIFIED

XIV. Such of the provisions of this code as are not required by the National Industrial Recovery Act to be included herein may, with the approval of the President of the United States, be modified or eliminated as changed circumstances or experiences may indicate. This code is intended to be a basic code, and study of the trade practices of the electrical manufacturing industry will be continued by the Board of Governors of National Electrical Manufacturers Association with the intention of submitting to the Administrator for approval from time to time, additions to this code applicable to all employers in the electrical manufacturing industry and supplemental codes applicable to one or more branches or subdivisions or product classifications of the electrical manufacturing industry, such supplemental codes, however, to conform to and be consistent with the provisions of this code as now constituted or hereafter changed.

AFFECTS BUT ONE INDUSTRY

XV. If any employer of labor in the electrical manufacturing industry is also an employer of labor in any other industry, the provisions of this code shall apply to and affect only that part of his business which is included in the electrical manufacturing industry.

Parts Manufacturers Plan Organization

(Concluded from Page 1, Column 3)

coils); H. F. Spoehrer, Alco Valve Co. (automatic control devices); W. M. Whalen and H. A. Beattie, Truscon Steel Co. (cabinets and stampings for cabinets); G. William Gauger and M. P. Fugle, Commercial Coil & Refrigeration Co. (fin coils); E. Frederickson, Imperial Brass Co. (brass fittings); G. A. Rempe, Rempe Fin Coil Co. (fin coils).

P. Fred Lesley, Liquid Cooler Corp. (cooling devices); A. F. Knoblock, Bundy Tubing Co. (welded parts); W. E. Kalman, The Insulite Co. (insulation); D. H. Corlette, Wood Conversion Co. (insulation).

Harvey B. Lindsay, Dry-Zero Corp. (insulation); C. C. Hull, Rex Mfg. Co. (cabinets); H. J. Krackowizer, Refrigeration Appliances, Inc. (fin coils); H. W. Jarrow, Jarrow Products Corp. (gaskets); Louis Ruthenburg, National Electrical Manufacturers Association; F. M. Cockrell, ELECTRIC REFRIGERATION NEWS.

Trade Practice Provisions Listed For Retailers' Code

(Concluded from Page 1, Column 4)

plus 10 per cent to insure that labor costs shall be at least partially covered.

"B—Nothing in the foregoing paragraph, however, shall be interpreted to prevent bona fide seasonal clearances of merchandise so advertised or plainly marked or of highly perishable or damaged goods so advertised or plainly marked nor shall any individual or retail organization for the purpose of a bona fide discontinuance of the handling of any line when so advertised or plainly marked be stopped from selling said merchandise at less than net invoice delivered cost plus 10 per cent to insure that labor costs at least shall be partially covered.

"C—Advertising (written, printed, radio, or display) which misrepresents merchandise, values, policies or services; or selling methods which tend to mislead the consumer, shall not be made by any individual or organization selling at retail.

"D—Organizations or individuals selling goods at retail shall be free to advertise truthfully their own goods, policies, services, and their own prices but reference to the goods, policies, services, or prices of competing retailers shall not be made.

"E—No individual or organization selling goods at retail shall make use of, participate in the use of, publish or broadcast any statement which lays claim to a policy or continuing practice of generally underselling competitors.

"F—No individual store or organization selling goods at retail shall sell convict or prison-made products."

The labor provisions of the code, which have already been approved, are as follows:

On and after the effective date of this code no individual or organization selling at retail shall work any employee (except executives whose salaries exceed \$35 per week, or registered pharmacists or other professional persons employed in their profession, or outside salesmen, and except outside deliverymen and maintenance employees who may be employed 48 hours weekly or more, if paid time and one-third for all hours over 48 hours weekly) for more than 40 hours per week, excepting at Christmas, inventory, and other peak periods, employees may work 48 hours per week for a maximum of not to exceed three weeks in each six months.

And not to reduce the hours of any store or service operation to below 52 hours in any one week, unless such hours were less than 52 hours per week before July, 1933, and in the latter case not to reduce such hours at all.

The maximum fixed in paragraph 3 (A) (of the President's agreement) shall not apply to employees in establishments employing not more than two persons in towns of less than 2,500 population, which towns are not part of a larger trade area.

On and after the effective date of this code, retail stores shall establish minimum weekly rates of wages for the retail trade for a work week specified in Section 3 (A) (of the President's agreement) as follows:

Within cities of over 500,000 population (by reference to the 1930 Federal census) or in the immediate trade area of such cities at the rate of \$14 per week.

Within cities of from 100,000 to

500,000 population (by reference to the 1930 Federal census) or in the immediate trade area of such cities at the rate of \$13.50 a week.

Within villages, towns, or cities with a population of 2,500 to 100,000 (by reference to the 1930 Federal census), unless they are included in a trade area as defined by clause (A) or (B), at the rate of \$13 per week.

The minimum wages that shall be paid by employers in the retail trade to any of their employees shall be at the rate of \$1 per week less in the Southern section of the trade than the rates specified in paragraph (A), (B), and (C) of Section (4).

The South is defined as the following states: Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Maryland, District of Columbia, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas.

In the entire United States, in villages, towns, and cities under 2,500 population to increase all wages by not less than 20 per cent provided that this shall not require wages in excess of \$11 per week.

Except that on and after the effective date of this code, union employees between the ages of 16 and 18 years, inclusive, with less than six months' experience in any retail store, shall be paid at the rate of \$2 less for a work week as provided in Section 3 (A) (of the President's agreement) and except that apprentices employees more than 18 years of age with less than six months' experience in any retail store shall be paid at the rate of \$1 less for a work week as provided in Section 3 (A), provided that the minimum shall not be less than at the rate of \$11 per week.

Except for the changes made by these sections, the provisions of the President's general agreement stand for the industry.

Interpretations Clarify Blanket Code

Official interpretations of President Roosevelt's reemployment agreement (blanket code) to which retailer's code is supplemental were made last week by Donald Richberg, counsel for the recovery administration, in response to demands from employers for clarification of various provisions of the code.

Because provisions of the code are of interest to both employers and employees in the electric refrigeration industry official interpretations of some of the provisions are herewith presented.

Persons buying goods and selling them independently or persons selling solely on commission do not come within the labor provisions of the blanket code, provided, however, that persons regularly employed to sell on commission with a base salary or guaranteed compensation, do come within the provisions of the code.

Paragraph 9 of the President's agreement, obliged the employer "not to increase the price of any merchandise sold after the date hereof over the price on July 1, 1933, by more than is necessary by actual increases in production, replacement, or invoice costs of merchandise, or by taxes or other costs, and, in setting such price increases, to give full weight to probable increases in sales volume and to

refrain from taking profiteering advantages of the consuming public."

Prevents Price Skyrocketing

This was intended to prevent skyrocketing prices, but in interpretation No. 5, the Recovery Administration ruled that where the July 1, 1933, price was a distress price, the employer signing the agreement may take his cost price on that date as the base for such increase in selling price as is permitted under the section quoted above. This is designed to permit an employer to escape from ruinously low prices that the President had said were caused by a "recalcitrant minority" in his industry.

Paragraph 2 of the President's Agreement provided that stores or service operations should keep open 52 hours per week. This was designed to prevent retailers from avoiding the employment of new clerks by shortening hours.

No Limit on Maximum Hours Of Operation

Interpretation No. 11 outlines that the agreement imposes no limit on the maximum number of hours of operation of a store or service. But the maximum hours of work for individual clerks is limited.

Part-time workers provide a problem for the Recovery Administration. It is declared in Interpretation No. 10 that the minimum wage for a part-time worker is a wage such that if the employee worked at that wage for a full week of 40 hours he would receive the minimum wage prescribed by the agreement. This means that there must be a base hourly rate for payment of part-time workers that assures them at least the same relative compensation as full-time workers if the full-time workers are receiving the minimum wage.

40-Hour Employees Listed

Among workers who are to be limited to 40 hours of work per week are: . . . delivery men, watchmen, and porters. This is according to Interpretation No. 12. Interpretation No. 18 added maintenance forces, including charwomen, window cleaners, etc.

Owners operating their own establishments without employees can get the blue eagle insignia merely by signing the agreement and a certificate of compliance.

Also, maximum hours of work provided in the blanket code do not apply to employees receiving more than \$35 a week who are acting primarily in a managerial capacity.

Much of the uncertainty of the whole agreement revolves around paragraph 7, which reads: "The undersigned hereby agrees with the President as follows: Not to reduce the compensation for employment now in excess of the minimum wages hereby agreed to (notwithstanding that the hours worked in such employment may be hereby reduced) and to increase the pay for such employment by an equitable readjustment of all pay schedules."

Wage Reductions Not Permitted

This means that the pay for workers who now are receiving more than the minimum wage named in the agreement, shall not be reduced. Workers are to continue to receive at least the same pay for the same work. It is not a share-the-work plan to spread the same pay roll over a larger number of workers, but is designed to increase the amount of money that each company devotes to its pay roll.

It provides, too, that pay for employees above the minimum wage group should be raised by "equitable readjustment."

What are "equitable readjustments," and what about organized labor working under contract with employers?

Existing Contracts Non-Cancellable

Counsel Richberg ruled that the Recovery Administration could not attempt to abrogate existing contracts, and employers with contracts made with union labor, calling for longer hours than the maximum provided in the code, still can comply with that agreement by noting the exception. Wages in union agreements come in a class far above the minimum and so are not directly a point at issue.

As a result of the interpretation, employers with contracts which call for a specified number of hours of work at a definite wage per hour, still can employ their help for those hours and wages, if above the minimum. But if there is no specification of the number of hours to be worked in any given period, employers will be expected to comply with the maximum set by the code.

Concerning paragraph 7, which is most at issue, the interpretation made on Aug. 3 reads:

"Paragraph 7 prevents the reduction of compensation in excess of the minimum, whether it is paid by the hour, day, week, or month.

Same Pay for Shorter Hours

"Therefore, an employee previously paid by the day, week, or month, will receive as much for the shorter day, week, or month.

"An employee paid by the hour will receive as much per hour, but as shortening his hours will reduce his

actual earnings per day or week, his compensation per hour is to be increased by an equitable adjustment.

"There is no fixed rule which can be applied to determine what is an equitable readjustment. In general, it will be equitable to figure what the employee would have earned at his previous rate per hour in a normal week in the industry, and then to increase the hourly rate so as to give him substantially the same compensation as he would have gotten for that normal week.

Factors Affecting Readjustments

"But consideration must be given to other factors, including: Is the existing rate high or low compared with the average rate paid in the industry? Will the resulting adjustment result in an unfair competitive advantage to other employers or other trades or industries? Will a long standing wage differential be lost if there is no increase in the existing rate?

"Where an employer is bound by the terms of a contract with a labor organization entered into as the result of bona fide collective bargaining and he is unable to effect a change in such contract by agreement in order to comply with the terms of the President's reemployment agreement, he may certify his compliance with the President's agreement with the following exception: 'Except as required to comply with the terms of agreements between undersigned and (name of labor organization).'

Right of Change Limited

"It should be understood that this exception can be made only in the case of a contract not subject to change at the discretion of the employer and then only after a certified copy of the contract has been filed with the National Administration and its approval has been given to the exception stated."

Two other examples were recited by the Recovery Administration in its effort to make clear the meaning of the provision. One was of employees who now work 40 hours per week in factories. When the code is applied these hours are reduced to 35 per week. In this case it is suggested that if wage rates were increased one-seventh the same compensation would be received by the worker. This applies to employees who, even with the shorter work week at the old rates of pay would still be receiving more than the minimum wage named in the code. The same pay for a shorter week in this case would be considered an "equitable readjustment."

Employers' Privilege

There is the other case of a factory now working its employees 60 hours a week. When hours are reduced to 35 as called for in the code, then a one-seventh increase in pay would not make up the difference created by the greatly shortened hours. Yet, if an employer should increase wages five-sevenths as would be necessary to give the worker the same pay for the 35-hour week that he received for the 60-hour week, then the employer might be heavily burdened. Some increases in pay would be expected, and the weekly wage earned would still have to be above the minimum quoted in the agreement, but employers would have discretion in deciding the new pay for shorter hours.

Refrigerant Pipes O.K.; Tear Gas to Blame

NEW YORK CITY—Discovery of the shells of two tear-gas bombs in the intake pipe of the air-conditioning system in the New York Stock Exchange building has put to rest the rumor (printed in some newspapers) that a leak in the refrigeration pipes which form part of the air-conditioning system had been the cause of the "gas attack" which forced stock exchange members and clerks from the building last Friday.

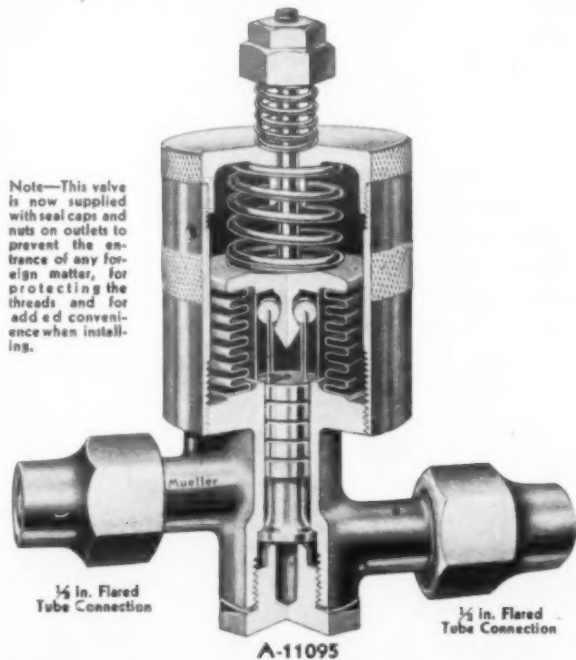
When the gas which was discovered in a cloud near the ceiling of the building was cleared, police, wearing gas masks, first made an investigation of the air-conditioning apparatus, but found nothing wrong. They finally came upon the shells of the bomb tucked into an intake pipe on the fifth floor. The release pins of the bombs had been loosened.

DuVAL MAKES SALES WHILE PALS SHOOT BIRDIES

MANSFIELD, Ohio—When attendants at the recent Westinghouse jobbers' convention in Hot Springs took the afternoon off for a game of golf, R. L. DuVal, merchandise manager for the mid-Atlantic district, decided not to play.

When the golfers returned at dusk, they found that Mr. DuVal had sold the hotel cashier a refrigerator, sold a range to the hotel management, found that the hotel (the Homestead) had its own power plant and was selling electricity in the neighborhood, made the hotel management a Westinghouse dealer, worked out with the manager a special power rate for electric ranges.

A Two-Temperature Control Valve That Will Maintain the Range in Temperature You Require for Refrigerator and Display Case or Cooling Cabinet



This valve is so constructed that by merely turning the outside knurled case a service man can raise or lower the temperature without danger of losing the differential which has been previously set.

The differential is built into the valve and cannot be changed.

The temperature range may be changed without the necessity of a recheck or numerous visits of the service man.

Simplicity of construction insures a long and trouble proof service.

The snap action feature prevents seat erosion and assures uniform performance.

The body is a brass forging and is therefore seep proof and free from defects.

NOTE—When Ordering Specify "Cut-In" and "Cut-Out" Readings

Mueller Brass Co.
PORT HURON, MICHIGAN

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago. We manufacture a complete line of valves and fittings and can supply your every requirement.

ENGINEERING

80% Volumetric Efficiency Obtained in New Direct-Connected Compressors

Westinghouse Commercial Machines Are Direct-Driven, Reciprocating, Operating at 1150 r.p.m.

By J. W. Baugher, Jr., Supply Engineering,
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

UNTIL the last few years compressors have been driven almost entirely by means of belts and gears, at speeds of from 100 to 500 r.p.m. Today reciprocating compressors are being operated with success at two or three times this speed, with appreciable advantages in performance.

Electric refrigeration and later air conditioning contributed largely to these changes, with the result that these modern compressors provide a number of outstanding features, such as:

1. Light, compact, inexpensive refrigerating units.
2. Quiet operation because of the absence of belts and gears.
3. No shaft seal difficulties due to vibration from belts or gears.
4. High mechanical and volumetric

efficiency provided compressors are designed for high speeds.

The advantage of light weight and small overall dimensions are obvious, especially in refrigeration and air-conditioning applications.

Other benefits, not so apparent but none the less real, are almost equally important. Compactness is obtained not only because of the elimination of bulky speed-reducing mechanism, but also because the displacement per unit of time is achieved with smaller

cylinders as a result of the higher operating speed. Consequently, bearings, crankshaft and all other parts of the compressor become smaller and cheaper. Compactness, therefore, means less expensive replacement parts and lower first cost, or higher quality at the same cost.

The compressor illustrated below, for example, has completely counter-balanced drop-forged crankshafts, force-feed lubrication to all bearings, and similar features available only in the highest grade of machines.

Quietness of operation is becoming a more rigid requirement every day. In a sale of air-conditioning equipment noise is often a deciding factor, and much thought is being given to reducing it by flexible mountings,

sound-proof cabinets, and the like. A vibration produced by a belt or gear drive makes it difficult to obtain an absolutely gas-tight joint with the conventional bellows-type shaft seal used on refrigerant compressors. With a direct-connected compressor this vibration does not exist.

It was once thought that high speeds would bring other troubles with compressor shaft seals. However, improvements in the "self-lubricating" bronzes of which the seal nose pieces are made enable the designer to use with safety a higher PV value for the seal bearing face; and advancement in the construction of the seals themselves, allowing the placing of the spring outside the bellows, has resulted in lowering the actual PV value by reducing the diameter of the bearing face.

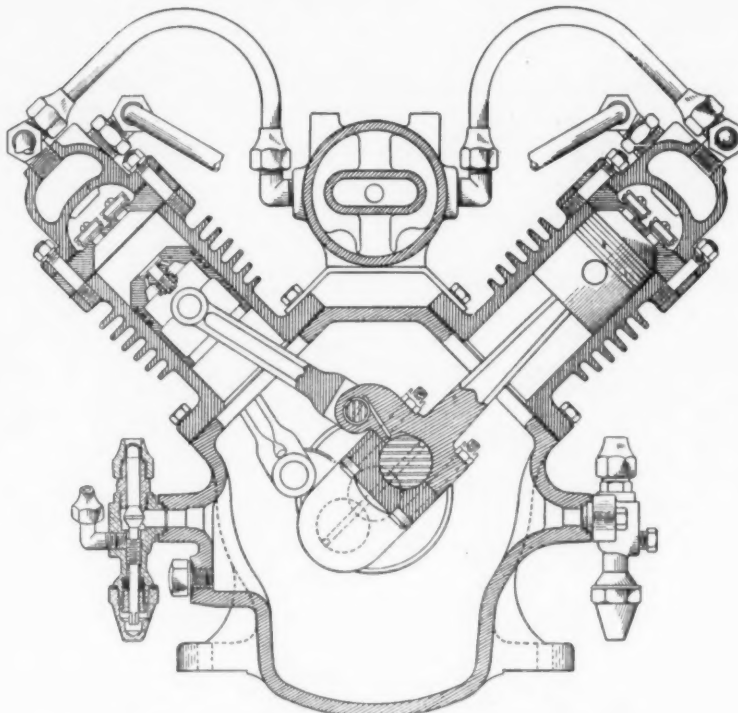
In recent tests made with bellows-type seals on which the bearing face was 1 1/2 inches in diameter, no wear could be detected when the seals were dismantled after over a thousand hours continuous running without leakage, at a speed of 1750 r.p.m.

These tests are being continued to attempt to determine whether there is any limit to the life of a properly designed seal. The results obtained in these tests have been duplicated on actual installations for railway car air conditioning.

Mechanical and volumetric efficiencies of direct-driven reciprocating compressors compare very favorably with efficiencies obtained with slow-speed compressors.

High-speed compressors must be designed with large ports and valves so that the losses due to the high velocities of the gas will not be serious. Volumetric efficiencies well above 80 per cent have been secured consistently with compressors running at 1150 r.p.m.

New 4-Cylinder Williams



Cross-section of the new 4-cylinder Ice-O-Matic described below.

CYLINDERS PAIRED IN NEW WILLIAMS

BLOOMINGTON, Ill.—Complete information on Williams Oil-O-Matic's newest and largest compressor has just been made available from the Ice-O-Matic factory here.

Designated as model W-W with a 3-hp. motor, and as model V-W with a 2-hp. motor, the compressor has four cylinders operating in pairs, each pair at right angles to the other as shown in the above cross-section. Both models have water-cooled condensers constructed in the liquid receiver.

Compressed refrigerant gas is discharged into a manifold located between the two cylinder blocks. The manifold is water-cooled, water passing through the outer chamber.

Crankshaft of the compressor is of one-piece forged steel construction with all bearing surfaces ground to fit. The connecting rods on one side are linked onto the connecting rods on the opposite side, only one rod of each pair connecting directly to the crankshaft. Access to the connecting rod bearings is made through removal of the cylinder blocks.

Bore of the cylinders is 2 1/2 in., with a stroke of 2 1/2 in. Model W-W (3-hp.) operates at a speed of 430 r.p.m., furnishing 2,800 lbs. of ice melting effect per 24 hours, under A.S.R.E. standard conditions. Model V-W (2-hp.) runs at 300 r.p.m., producing 1,960 lbs. of ice melting effect per day, A.S.R.E. These ratings are based on operation with Ice-O-Matic's standard refrigerant, methyl chloride.

The compressor has an oil pump rotor connected to, and turning with, the crankshaft. A piston is built in this rotor, the end of the piston being held by a spring against the inside of an eccentric ring surrounding the rotor. This eccentric ring causes the piston to reciprocate when the rotor assembly turns with the shaft.

In the course of travel, a port in the rotor makes contact with an intake port and an outlet port in the pump housing. Action of the piston is timed with the porting so that the suction created by the pump draws oil from the crankcase to be discharged to the oil channel in the crankshaft.

The escape of oil being restricted at the bearings, oil pressure is built up by the pump forcing the oil under pressure to the bearing surfaces. The maximum pressure is controlled by an automatic adjustable by-pass which Williams engineers say should be set at 18 to 22 lbs. above the crankcase pressure. The pressure imposed on the oiling system is the difference between the pump gauge reading, and the pressure in the crankcase.

Pressure in the oiling system is adjusted by removing the plug in the bottom of the pump housing and turning a counter-sunk screw. Turning clockwise increases the pressure.

When the oil is saturated with methyl chloride, the oil pressure may be reduced to around 5 lbs., designers of the system state, but after the compressor has operated for a time the oil gives up the refrigerant, and pressure will increase to proper value.

The lubrication system forces oil through the drilled crankshaft to connecting rod and main bearings, pistons and wrist pins being lubricated by a spray from the crankshaft bearings.

Piston valves are of the poppet type, discharge valves being steel reeds. The drive is by V-belts, an automatic take-up maintaining a proper tension. The seal employs a revolving steel ring with a stationary bronze seat.

ILLINOIS PORCELAIN PLANT UP AT AUCTION TUESDAY

MORRISON, Ill.—Illinois Refrigerator Co.'s porcelain plant here will be offered at public sale to the highest bidder for cash next Tuesday, Aug. 15, according to notices just mailed by Philip H. Ward, referee in bankruptcy.

5 BUREAU DIVISIONS TAKEN OVER BY A.S.A.

WASHINGTON, D. C.—The work of five divisions of the U. S. Bureau of Standards, which were considerably curtailed under the present government's economy program, have been taken over by the American Standards Association. These divisions are safety standards, building and plumbing code sections of the building and housing standards, simplified practice, and specifications.

All except the safety divisions were set up by Herbert Hoover when he was Secretary of Commerce. Their purpose was to develop uniformity in products, and to eliminate waste resulting from a great variety of specifications in manufacture. Safety standards were set up under the administration of President Wilson.

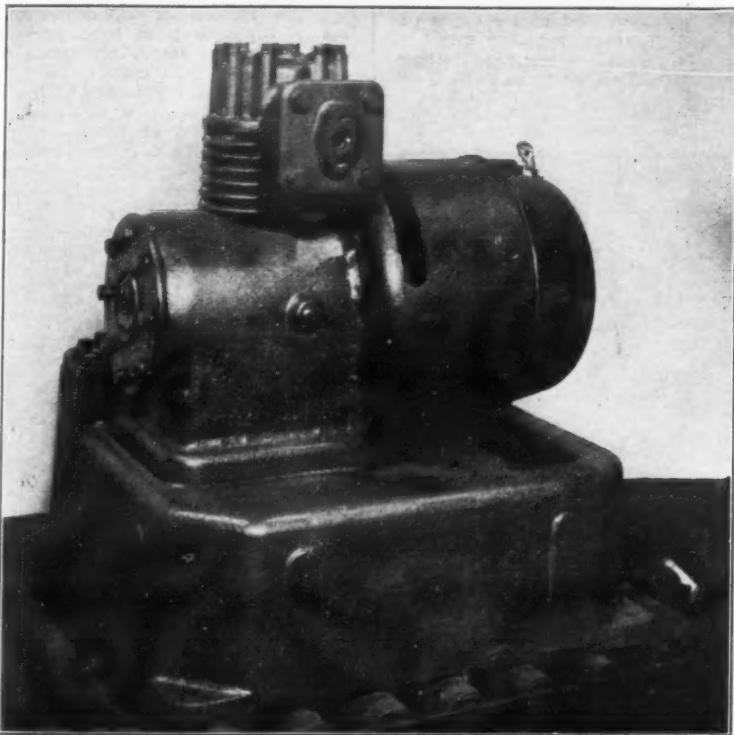
In its policy of reducing governmental agencies, the Roosevelt Administration has turned to private agencies to continue the work in its present or modified form.

In announcing the change, Daniel C. Roper, Secretary of Commerce, said that he did not know whether the association would make use of facilities belonging to the Bureau of Standards. They probably will be used, however, if Secretary Roper gets approval of his request for \$450,000 in funds for testing materials.

The American Standards Association was organized in 1918 by five major engineering societies to serve as a clearing house through which the standardization work of technical and industrial bodies could be correlated, and to prevent duplication of such work and promulgation of conflicting standards.

Up to the present time, the association has approved 237 national industrial standards, and projects for 135 other standards are now under way.

High Speed, Direct-Connected



Direct-driven Westinghouse compressor with integral motor operating at 1150 r.p.m.

efficiency provided compressors are designed for high speeds.

The advantage of light weight and small overall dimensions are obvious, especially in refrigeration and air-conditioning applications.

Other benefits, not so apparent but none the less real, are almost equally important. Compactness is obtained not only because of the elimination of bulky speed-reducing mechanism, but also because the displacement per unit of time is achieved with smaller

Artic
REG. U.S. PAT. OFF.

(R & H Methyl Chloride)

The IDEAL Refrigerant

Strict production control and analytical tests on ARTIC before shipping assure you of receiving a product always pure and uniform, always up to rigid specifications. That is why ARTIC, the Ideal Refrigerant, always gives satisfactory, trouble-proof refrigeration.



E. I. DU PONT DE NEMOURS & CO.
Incorporated

The R. & H. Chemicals Department
Wilmington, Delaware

Assembly by Copper Hydrogen Electric Welding

offers you these

IMPORTANT ADVANTAGES

LOWER COST

This process provides all the economies of welding on a quantity production basis. As many as a thousand pieces—and an unlimited number of welds in each piece—may be made at one time, in one passage through the furnace! In addition to the economy of the process itself, it permits the replacement of expensive castings and forgings with inexpensive stampings, drawn shapes, bushings, etc.

GREATER STRENGTH

The Hydrogen-Welded joint has been proven in many tests to be actually stronger than the parts welded together. The weld is a continuous bond formed, not of copper, but of copper-iron alloy which has physical properties comparable to the steel itself.

LIGHTER WEIGHT

The ability to replace heavy intricate forgings and castings with such light-weight units as stampings, drawn shapes, bar stock, screw machine fittings, etc., provides for product improvement and a worth-while reduction in weight with no sacrifice of strength.

GAS-TIGHT JOINTS

This is highly important to manufacturers in the refrigeration industry: the joints produced by Hydrogen-Electric-Welding are dense, continuous, absolutely gas-tight.

CLEAN SURFACES

Due to the reducing atmosphere of the furnace in which the Hydrogen-Welding process is carried on, the welded parts emerge from the furnace absolutely clean and free from scale or oxides, both inside and outside. This is a highly important point in connection with the assembly of such enclosed parts as headers, tanks, floats, etc.

Hydrogen-Welding is adaptable to practically any product which can be assembled from iron or steel parts. It requires no equipment investment on your part, as the entire process is carried on in the huge "Zeppelin" Electric Furnace in the plant of the Bundy Tubing Company. The parts may be furnished to Bundy either machined for a snug fit or assembled, as you wish; or Bundy will furnish finished parts to your specifications. Send us your prints and specifications for quotations.

BUNDY
TUBING COMPANY

4815 Bellevue Ave.

Detroit, Mich.

SERVICE

Temprite Gives Three Service Principles For Instantaneous Beverage Coolers

Float Valve Assembly and Control Valve Are Only Parts Serviced in the Field

DETROIT—Three main principles of operation of the Temprite beer and water coolers are listed by Liquid Cooler engineers in the installation and Service manual which came off the press last week. Temprite coolers are of the flooded type, employing direct expansion of refrigerant, with the water or beverage coil immersed in a bath of liquid refrigerant.

The three principles stressed to the service and installation men are:

1. All the refrigeration produced in the system is caused by the evaporation of the liquid refrigerant within the evaporator.
2. Evaporation is the result of adding heat to the liquid refrigerant in the cooler with the compressor maintaining a constant predetermined suction pressure.
3. The temperature of the refrigerant in any part of the system is normally controlled by the pressure existing in that particular part of the system.

Next in importance to these three cardinal principles, the service man must understand thoroughly the operation of the particular make of condensing unit. When a call is made on a Temprite hook-up, diagnose the trouble from the gauges on high and low side, Liquid Cooler engineers advise.

Troubles with a Temprite system will show up in the same manner as with any other low side system. In order that the service man may become more familiar with the causes and indications of most of the troubles, the following information is given.

As Temprite floats are sealed in and cannot be serviced in the field, only the float valve assembly and the control valve need be considered.

Should the float valve become restricted or stuck closed, the probable cause is a Liquid Inlet screen clogged with dirt. In the event of a restricted or sticking valve, not enough refrigerant would be allowed to pass through the valve and short cycles would result and the water or beverage temperature would rise after the first drink or two, according to the extent of the restriction.

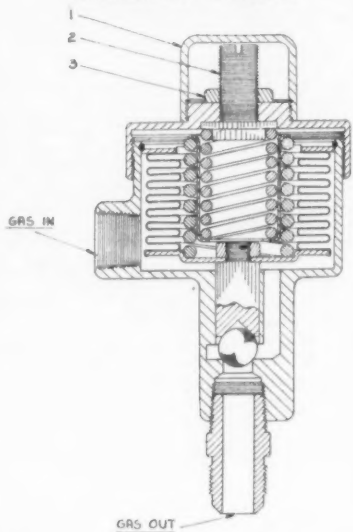
If the needle is stuck closed, the compressor will short cycle until all the gas is pumped out of the Temprite and then the compressor will stop for lack of pressure to keep the switch closed. Naturally, the exit temperature will be the same as the inlet.

In the case of the larger models, the compressor may be shutting off from high head pressure caused from the inability of the receiver to hold the charge. In the case of a multiple hook-up of Temprite, the only symp-

tom will probably be a rise in exit water or beverage temperature.

When the float valve is leaking or stuck open, the probable cause is dirt between needle and seat. This trouble is readily detected, as a leaky needle usually lets more liquid into the

Control Valve



One of Temprite's large adjustable temperature control valves, with a cap (1) which can be removed so that the adjusting screw (2) and the lock nut (3) are accessible. Turning the screw to the right increases the pressure. In certain cases the valve is furnished without the adjustable feature.

cooler than is necessary, the result being the liquid level is higher than normal, causing the liquid to spill over into the float and the return line and crankcase to frost or sweat. A float needle that is leaking badly or stuck open causes the machine to run all the time, little or no refrigeration and frosted suction line.

Remedy for this is to close off liquid line at receiver, or where other equipment is required to operate, close off liquid at riser shut-off valve. This shuts off liquid to cooling unit. Allow compressor to operate normally with water running through the Temprite. The refrigerant will evaporate and take the course to the receiver.

If receiver won't hold the additional

charge, a cool empty drum must be attached to receive the charge. After being satisfied that the refrigerant has been pumped out as much as possible and remembering that a gas pressure is still in the evaporator, close the suction shut-off valve tight and disconnect the liquid line.

Unscrew the float valve body. The complete assembly can now be removed. Examine the needle and screen by unscrewing hex cap and removing the needle and screen. Be sure no dirt or water gets into the evaporator while the float valve assembly is removed.

Washing the screen in a good grade of gasoline will usually remove any dirt or grit. In replacing the float valve assembly be sure the gasket is good, and tighten the complete assembly in its position.

Now proceed to charge the cooler and be sure joints are tight. Make sure that the seal cap is replaced tightly as a sulphur leak at this point will soon corrode the cooler and fixture.

Temprite temperature control valves are of the bellows type, actuated by the gas pressure within the cooler. When beverage is drawn, liquid refrigerant is vaporized, creating a pressure within the cooler which raises the bellows plate and the needle in the valve—releasing vapor to the suction line.

Then when sufficient vapor is liberated to lower the pressure to the pre-

Installation Hints

Temprite installation and service information is published with some detail in this issue of the News because of the extensive application of Temprite units to draft beer cooling. Particularly valuable is the chart on the next page which analyzes service troubles, causes, and remedies.

General installation hints made by Temprite engineers follow:

Always install with thought for service.

Do not overload cooler or compressor.

Condensing unit should not operate longer than recommended by the manufacturer.

When possible, avoid oil traps.

Fasten tubing or conduit rigidly.

Where duplexed, be sure water or beverage lines do not come in contact with other low temperature equipment.

All flare nuts should be of the forged type.

Be sure liquid and suction lines are connected to proper outlets.

Make sure compressor control is not set too high.

Test for leaks, making sure the seal cap nut has been replaced tightly.

Insulate exit water or beverage lines if cooler is not installed close to faucet.

Be sure there are no restrictions in the lines.

determined valve setting, atmospheric pressure plus the spring pressure against the bellows plate automatically closes the valve, thereby maintaining the predetermined pressure in the cooler.

Control Valve Troubles

Any difficulty with water or beverage freezing will be caused by the needle leaking or not seating properly, or adjusted too low. Before making any adjustment, thaw out the cooler by closing the suction shut-off valve on the cooler, leaving the faucet or jet open.

Apply heat, if possible externally until the water begins to flow. If heat is applied by a torch, care should be taken not to apply enough to get the cooler hot. If adjustment doesn't remedy the trouble pump the job down and replace the control valve with a new one, returning the faulty valve to the factory.

Adjusting the Control

Large Valves—Models 610 or 611

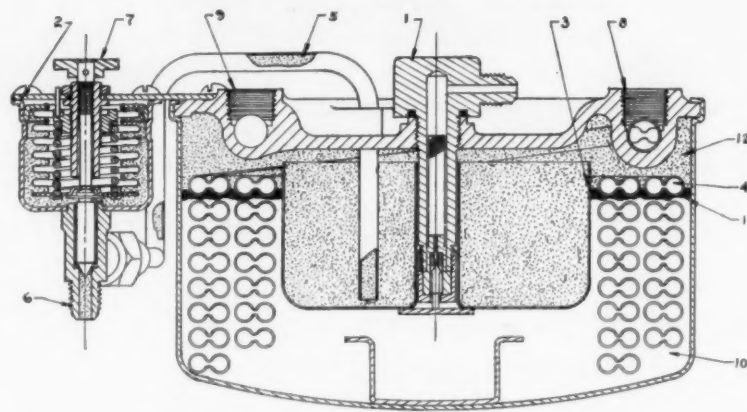
Insert a screw driver in the slot and turn to right or clockwise to raise temperature, and vice-versa, turn screw driver to left or counter clockwise to lower temperature. Turn adjusting screw one-half turn and check temperature by drawing four to five drinks in the same glass with time intervals of 15 seconds between glasses.

Temperature control valves are factory set to deliver definite temperatures and if this exit temperature is not obtained, the trouble will nearly always be traceable to a cause or causes other than temperature control valve setting.

Small Valves—Models 500 and 512 (On Model 22-W Only)

To adjust the control valve on the smaller models proceed in the same manner as above except turn adjust-

Temprite Cross-Section



Cross-section of a Temprite beer or water cooler. Parts illustrated are as follows: 1. Float valve. 2. Gas pressure valve. 3. Float. 4. Beverage cooling coil. 5. Suction tube. 6. Suction outlet to compressor. 7. Manual suction shut-off. 8. Cold beverage outlet. 9. Warm beverage inlet. 10. Liquid refrigerant. 11. Oil strata. 12. Refrigerant vapor.

ing screw to the right or clockwise for lower temperature and to the left or anti-clockwise for higher temperature.

High exit temperatures may be caused by:

1. Insufficient refrigerant charge.
2. Too small a compressor. If the compressor is of sufficient capacity, the suction pressure will always be maintained below the recommended cut-in point of the compressor control when the gallons per hour drawn or rates of draft are within the recommendations.
3. Cooler too far from point of use or lines not properly insulated.
4. Float valve or screen clogged.
5. Compressor and cooler capacities not equal to actual requirements.

The following are standard settings of temperature control valves:

- Model 22's in fixture: 47 to 50° F.
- All other models: 38 to 40° F.
- Restaurant type and circulating: 38 to 42° F.

Excessive Rate of Draft Through Cooler

Rate of draft is the gallons of water drawn per hour with the faucet or jet held open, and it may be over the capacity of the cooler or the compressor. This may be remedied by reducing the rate of flow either by restricting the jet or faucet orifice or regulating the height of the stream with the pressure regulating valve, or both.

On circulating systems, if the water is not cooled in passing through the cooler check the capacity of the circulating pump. This is usually of too great a capacity. The circulating

pump capacity for models 90 or 900-CR should not exceed three gallons per minute; for models 200 or 2000-CR, five gallons per minute.

Pump capacity may be reduced by partially closing valve on discharge side and partially opening by-pass valve, or if there is no by-pass arrangement, by closing suction or discharge valve until proper temperature is obtained at various bubblers.

Insufficient Refrigerant Charge

Symptoms of insufficient refrigerant are continuous running or exceptionally short cycles, warm receiver, little or no refrigeration, hot liquid line, gas instead of liquid in liquid line, a rapid drop in high pressure after compressor stops, increased pressure on suction side, inability to pump up high condenser pressure with condensing medium shut-off, or a continuous hissing sound at cooler. (Note: When Temprite's are filling with refrigerant, this hissing sound is normal until there is sufficient liquid to raise float to close off needle.)

Compressor Short Cycling Excessively

Make sure an equalizer tank is connected into system. If no tank is used, the compressor will usually short cycle. The remedy is to install an equalizer tank of proper size and see that the compressor control settings are correct.

Compressor cutting out on high head pressure may be due to air in system, too much refrigerant, oil logged condenser, not sufficient water or air passing through or over condenser, float valve stuck closed.

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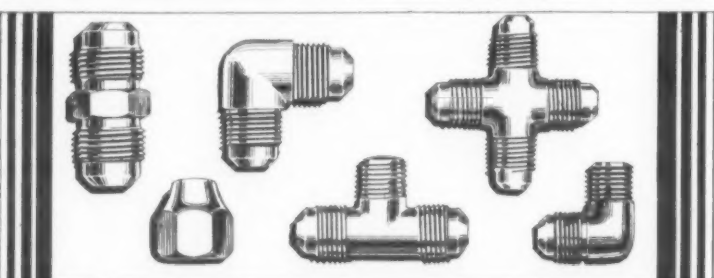
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45

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An Analysis of Service Troubles in Temprite Coolers With their Causes and Remedies

In case a Temprite does not operate satisfactorily it is possible to obtain normal and satisfactory operation only by eliminating all of the causes of trouble present both in the Temprite and its control valve and in all parts of the system other than the Temprite. Therefore it is necessary that a check be made of the entire system. In order to facilitate checking the following causes of troubles, their manifestations and remedies are tabulated.

HIGH EXIT TEMPERATURE OF WATER, BEER, OR BEVERAGE

CAUSES	MANIFESTATIONS	REMEDY
A—Overloaded cooler	Suction line may frost when too much liquid is drawn	Check inlet and outlet temperatures and quantity of liquid drawn against rated capacity of cooler
B—Shut-off valves have not been opened	System not in full operation. Compressor runs continuously. High suction pressure	Be sure to open wide all cooler, equalizer tank, and compressor valves
C—Compressor too small	High pressure. Short cycles if there is a high pressure cut-out	Equip system with larger unit
D—Air in the system	Frosted suction line, short cycles, increased operating time or continuous operation	Purge high side of system until normal pressure exists. Check for leaks on suction side of the system
E—Temprite float valve leaks or is stuck open	High condenser pressure	Close liquid valve until float valve is open then open valve again. If float valve still leaks, change it
F—Temprite float valve stuck closed or strainer blocked	Cooler does not fill up. Continuous hissing at float valve, cooler may freeze up when idle. If compressor is air-cooled the liquid line will be hot	Clean out float valve strainer. Change float valve if it is stuck
G—Shortage of refrigerant	High condensing pressure. Short cycles if there is a high pressure cut-out	Add refrigerant until float valves close and hissing stops. Important: Check whole system for gas leaks
H—Over-charge of refrigerant	If cut in pressure is too high cooler gets too warm before compressor starts	Remove refrigerant until normal conditions exist
I—Compressor control setting too high	Liquid lines will get cold beyond the restriction	Set compressor control to cut in lower than control valve setting in accordance with tables in this manual
J—Restriction in tubing connections	Cooler will not be effected unless compressor runs all of the time. Suction pressure builds up with no load and with compressor stopped	Remove kinks from lines. See that valves are fully open
K—Compressor exhaust valve leak	High condenser pressure. Short cycles. Hot condenser	Change exhaust valve
L—Insufficient cooling water running through condenser of water-cooled compressor	High liquid temperature until liquid in lines is withdrawn	Increase quantity of cooling water flowing through condenser
M—Liquid outlet lines exposed to high room temperature or run exposed for too great a distance	Acts like a bad float valve leak	Insulate lines if they are run considerable distance or exposed to high temperatures
N—Suction and liquid lines crossed	Improper oil in the system; oil in crankcase is pumped into receiver. High condenser pressure	Check liquid line from receiver liquid valve to cooler liquid valve
O—Oil logged condition (methyl chloride jobs only)		We recommend Argon oil for methyl chloride systems. If a compressor scrubs oil excessively it should be replaced

COILS FREEZING

A—Control valve leak	Increased compressor operation	If a 610 or 611 valve change it. If a 500 or 512 valve reset as explained or replace if necessary
B—Control valve setting too low	Increased compressor operation	Reset control valve or exchange for one set at factory
C—Slight shortage of refrigerant	Hissing noise at float valve. If air-cooled compressor, hot liquid lines, cold suction line	Add refrigerant until cooler fills and hissing stops. Then add enough more for reserve in compressor
D—Control valve set for sea level operation used at high	Liquid delivered from cooler temperature below normal	Control valves used at high altitudes must be especially set to accommodate these conditions

SHORT CYCLES

A—Float valve leak	Frosted suction line	Change float valve
B—Compressor exhaust valve leak	Increased compressor operating time. Pressure builds up in crankcase when load is shut off and compressor is idle	Change compressor exhaust valve
C—Float valve stuck closed or strainer blocked	High condenser pressure if the receiver cannot hold the charge in the Temprite in addition to its own normal charge. Temprite warms up to inlet liquid temperature	Clean or change strainer or change float valve
D—Air in the system	High condenser pressure. Compressor cuts out from high pressure.	Purge out air until pressure is normal. Check low side for leak
E—Compressor control set incorrectly	Cut in and cut out pressure incorrect	Set control in accordance with instructions in this manual
F—Overcharge of refrigerant	High condenser pressure. Compressor cuts out from high pressure	Remove refrigerant until conditions are normal
G—Slight shortage of refrigerant	Continued hissing noise at float valve. Cooler may freeze when idle	Add refrigerant until hissing stops. Then add amount of excess required by compressor
H—No equalizer tank in the system or equalizer valve closed	Short cycles	Equip system with equalizer tank or open valves as case may be

FROSTED SUCTION LINE

A—Float valve leaking or stuck open	Increased compressor operation. Short cycles or continuous operation. Suction and crankcase may frost	Close liquid valve until float valve is open. Then open valve again. If float valve still leaks change it
B—Slight shortage of refrigerant	If an air-cooled compressor liquid line gets hot. Continued hissing at float valve	Add refrigerant. Check for gas leaks
C—Too much liquid drawn from cooler with inlet temperature too high	Frosted condition disappears when cooler is not overloaded	Install a larger cooler

CONTINUOUS COMPRESSOR OPERATION

A—Shortage of refrigerant	Hot liquid line. Cold suction line. Cooler capacity reduced	Add refrigerant. Check for gas leaks
B—Float valve leaking badly or stuck open	Frosted suction line. Cooler capacity reduced	Change float valve
C—Compressor or unit too small for the load	High suction pressure	Install larger condensing unit
D—Compressor exhaust valves leaking badly	Pressure in crankcase builds up with compressor stopped	Change the compressor exhaust valve
E—Control valve leaking badly or adjusted too low	Cooler becomes too cold	Readjust control valve or replace it with one set at the factory

CORROSION OF PARTS (SYSTEMS USING SO-2)

A—SO ₂ leaks at flare nuts or valve seal caps	Odor of sulphur dioxide. System becomes short of refrigerant	Test for leaks at all connections with ammonia and tighten all seal caps over valve stems
B—Coolers or parts not in use left unsealed or exposed to moisture	Equipment becomes corroded	Keep all equipment which is not in use in a dry place. Cap all openings and valve stems
C—Moisture in the refrigerant of the system	Float valve leak. Block strainers	If a corrosion appears inside the system at the float or elsewhere the entire system must be discharged, dried out, and recharged with dry refrigerant and oil. The point at which water entered must be found and the leaks repaired

Independent Service Company Enters Business of Making Coils

By Elston D. Herron

DETROIT—An independent service company which has become a manufacturer of commercial finned coils is the Vallee Brothers Refrigeration Service Co. here. The company is now using the coil in its own service work, and hopes soon to develop a plan for selling it to other companies.

This coil, designed for use with ammonia systems, is made of steel refrigerant pipes and copper fins, these being hot galvanized after assembly together. Standard size of the fins in this coil is 6x24 in., although the company will make the coil in any size necessary, according to J. H. and A. T. Vallee, owners and operators of the service company.

The Vallee company, which does nothing but ammonia system work, came into being about five years ago when the Universal Ice Machine Co. of Detroit went out of business. The two Vallee brothers had been service and installation managers for that organization, and when it closed its doors, they bought all of the Universal parts and fittings and went into business for themselves.

They got their first customers by visiting users of Universal ammonia machines, and informing those users that the Vallee company would be able to supply parts and service at any time in the future. From these customers, the brothers Vallee secured other service customer leads, and are still building their business by this "using the user" scheme.

The service company is now sales agent in the Detroit area for ammonia machines manufactured by the General Ice Machine Co. of Decatur, Ind., and both of the Vallee brothers spend a part of their time selling this equipment to owners of restaurants, meat markets, food stores, etc.

The brothers maintain two shops for their work—one on Stewart St. in east Detroit, where the finned coils are manufactured and heavy repair and rebuilding work is done, and another on Pallister St., where machines are brought for minor repairs that cannot be made in the field.

During the past year, the service business has been none too good, say the brothers, but they believe that as general business conditions improve, there will be profit aplenty for good independent service organizations.

At the present, they say, 90 per cent of the ammonia machines in Detroit are in rather poor condition, and need general overhauling and rebuilding. But while the incomes of owners have been so low, they have been obliged to have only such repairs made as are absolutely necessary to keep the systems operating.

As incomes begin to climb again, says J. H. Vallee, these market and

restaurant owners will not hesitate to call on service companies for rebuilding and major repair work which will net the service men a substantial profit.

"Don't over-expand" is rule No. 1 with the Vallee brothers' company. The two men believe that many independent service organizations are forced out of business because they hire too many men and attempt to maintain over-large quarters during seasons when there is not sufficient business to warrant such practices.

"When we think that good times have returned, and when users of ice machines have enough money to spend to keep their refrigeration systems in good shape all the time, we will enlarge our organization, and not until then. It was just by not making a splurge during the depression that we were able to stay in business," the brothers say.

Several years ago, the Vallees had an opportunity to go to Russia to assist in installing and maintaining refrigeration systems in food markets operated by the Russian government, but declined the offer because they believed that "one doesn't have to go across the ocean to make a living in the refrigeration business."

Williams Has Manual Supplements

BLOOMINGTON, Ill.—Just released to holders of Ice-O-Matic Installation and Service Manuals are several supplementary sheets treating various phases of commercial refrigeration. The sheets cover compressor construction, data on dry expansion coils, compressor capacities, specifications of various condensing units, household refrigeration controls, and replacement of thermostatic expansion valves.

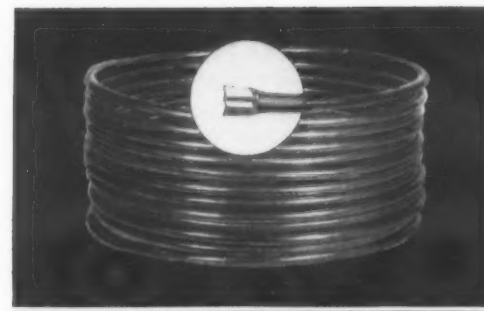
STEWART-WARNER GETS TWO NEW DEALERS

CHICAGO—Two new dealers have been added to the retail organization of Stewart-Warner Corp., according to company officials. They are the Twin City Tire Co., 118 Main St., Auburn, Me.; and the Valley Radio Co., 10 Brook St., Whitinsville, Mass.

PAYNE MANAGES WATER COOLER SALES

ST. LOUIS—Basil Payne has been placed in charge of retail and wholesale water cooler sales for Kelvinator Corp. in this city.

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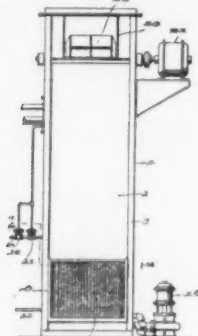
WOLVERINE
Seamless Copper Tubing
For Refrigeration

PATENTS

ISSUED JULY 25, 1933

1,919,197. AIR CONDITIONING SYSTEM. Claude A. Bulkeley, Buffalo, N. Y., assignor to Niagara Blower Co., Buffalo, N. Y., a Corporation of New York. Filed Jan. 28, 1931. Serial No. 511,783. 10 Claims. (Cl. 261-12.)

1. In a conditioner for saturating gas with a liquid, a spray chamber, means for forcing a current of gas from one end



1,919,197

of said spray chamber to the other, a cooling coil arranged in said spray chamber, means for spraying liquid at high velocity from the opposite sides of said coil and to impinge upon said coil and means for passing a refrigerated fluid through said coil to vary its temperature.

1,919,328. REFRIGERATOR DOOR LOCK. Augie L. Hansen, Chicago, Ill., assignor to A. L. Hansen Mfg. Co., Chicago, Ill., a Corporation of Illinois. Filed Aug. 13, 1931. Serial No. 555,734. 2 Claims. (Cl. 292-218.)

2. A locking device consisting of a sleeve having a lever lug projecting from one side thereof with an operating end parallel to said sleeve, a supporting bracket adapted for rotatively mounting said sleeve, said sleeve having a bar extending from its side opposed to said lever lug, and a handle pivoted to said bar to swing in a plane parallel to the rotative axis of said sleeve.

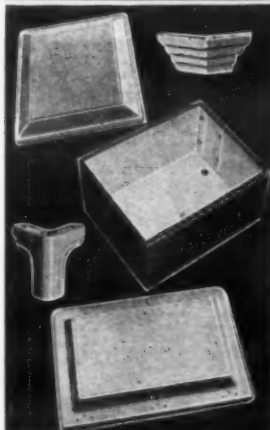
1,919,500. APPARATUS FOR CONTROLLING THE FLOW OF REFRIGERANT IN REFRIGERATING APPARATUS. Thomas E. Carpenter, Detroit, Mich., assignor, by mesne assignments, of two-thirds to Isaac L. Rice, Jr., New York, N. Y., and one-third to Stuart C.

PATENTS
Searches, Reports, Opinions by a
Specialist in REFRIGERATION
H. R. VAN DEVENTER
Solicitor of Patents - Refrigeration Engineer
342 MADISON AVE. NEW YORK

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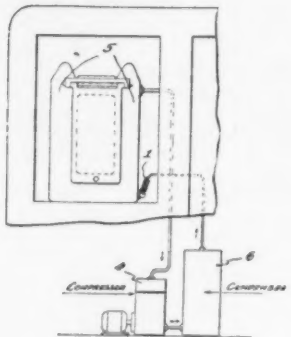
Our enormous equipment produces massive, completely press-formed, refrigerator cabinet shapes of accurate dimensions at low costs—ready for assembly with other parts in your plant. Design your cabinets to meet the modern trend and let Truscon furnish parts for which you are not equipped. We serve several leading manufacturers.

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TRUSCON

Barnes, Detroit, Mich. Filed July 9, 1926. Serial No. 121,301. 3 Claims. (Cl. 62-126.)

1. In a mechanical refrigerating system of the mechanical compression expansion flooded type the combination of a pulsat-

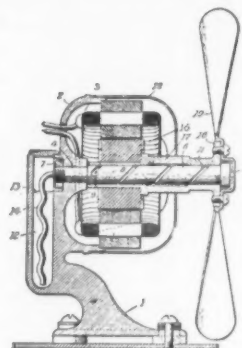


1,919,500

ing piston type compressor, a condenser, a cooling unit, and a single helical coil capillary tube positioned between the condenser and cooling unit and proportioned as to length and diameter relative to the capacity of said compressor, condenser and cooling unit as to restrict the flow of refrigerant and maintain the transmission to the cooling unit at a predetermined rate, said capillary tube connecting with the cooling unit and condenser.

1,919,522. ELECTRIC MOTOR. Carl E. L. Lipman, Chicago, Ill., assignor to Lipman Patents Corporation, Chicago, Ill., a Corporation of Delaware. Filed April 21, 1930. Serial No. 445,920. 3 Claims. (Cl. 172-36.)

1. An electric motor comprising a support, a stator carried thereby, a stub shaft fixed at one end to said support and pro-



1,919,522

jecting therefrom, a sleeve journaled on said shaft, a rotor carried by said sleeve in cooperative relation to said stator means for preventing longitudinal displacement of said sleeve relatively to said shaft, means for delivering lubricant between the shaft and the sleeve, and means for preventing the escape of lubricant so delivered at the free end of said shaft.

1,919,698. APPARATUS FOR THE AGGLOMERATION OF SOLID CARBON DIOXIDE. Waldemar Hessling, Geneva, Switzerland, assignor to Elvire Hessling-De Werner, Vevey-Territet, Switzerland. Filed July 21, 1928. Serial No. 294,520, and in Switzerland July 27, 1927. 1 Claim. (Cl. 62-121.)

Apparatus for the agglomeration of solid carbon dioxide comprising, in combination, a hopper for receiving same, a compression chamber beneath the hopper to receive the solid carbon dioxide gravitating from the latter, a piston in said chamber for compressing said solid carbon dioxide into agglomerated form, a crank shaft to drive said piston, an open discharge duct extending from said compression chamber, and a nozzle on one end of said duct provided with a plurality of openings.

1,919,777. HUMIDIFIER. Arthur Diehl, Milwaukee, Wis. Filed July 29, 1932. Serial No. 625,697. 1 Claim. (Cl. 261-29.)

A device for humidifying and purifying the air comprising a casing for receiving a liquid, the casing having air intake and air outlet openings arranged at opposed points, a sleeve surrounding the air outlet opening, a pump in the casing, a liquid conducting pipe communicating with the outlet of the pump terminating in a horizontally disposed leg having a plurality of perforations throughout the length thereof, a coarse screen depending from the leg for receiving the liquid from the perforations, a fan causing the intake of the air from the intake opening and the outlet of air out of the outlet opening and through the screen, a shell disposed within the sleeve having a rear wall and a side wall provided with struckout louvers for deflecting air into the shell.

and an electric heating element disposed within the shell.

1,919,781. METHOD AND APPARATUS FOR CONDITIONING AIR. Henry O. Forrest, West Englewood, and Lee Van Horn, Elizabeth, N. J. Filed Sept. 18, 1931. Serial No. 563,596. 4 Claims. (Cl. 257-9.)

1. In an air conditioning apparatus designed for intermittent use and having a dehumidifying chamber, a humidifying chamber and a brine storage tank, a heater disposed within said brine storage tank adapted to heat said brine for reactivation purposes and means to circulate said heated brine through said dehumidifying chamber and contact it with a blast of air whereby excess water is removed from said brine.

1,920,007. FRAME FOR REFRIGERATOR DOORS. Kenneth J. Durant and Carl F. Hilldring, Akron, Ohio, assignors to American Hard Rubber Co., New York, Oct. 20, 1931. Serial No. 569,934. 7 Claims. N. Y., a Corporation of New York. Filed (Cl. 20-35.)

7. A frame for refrigerator doors having a hollow hard-rubber casing provided



1,920,007

with one relatively soft and penetrable wall, and spaced sections of a penetrable filler located within and enclosed by the casing.

1,920,043. HUMIDOSTAT. Charles F. Warrick, Detroit, Mich., assignor to Whitehead & Kales Co., River Rouge, Mich., a Corporation of Michigan. Filed May 18, 1931. Serial No. 538,307. 10 Claims. (Cl. 297-1.)

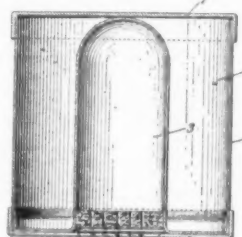
1. A laminated hygroscopic element having a hygroscopic section and a non-hygroscopic section united to the section aforesaid and having registering recesses in the contacting faces thereof.

1,920,050. EVAPORATOR. Alvin H. Baer, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a Corporation of Pennsylvania. Filed June 4, 1932. Serial No. 615,415. 11 Claims. (Cl. 62-128.)

7. An evaporator comprising an upper and a lower header, laterally bent riser tubes connecting said headers, and insulated tubes connecting the ends of the upper with the ends of the lower header for returning liquid refrigerant from the upper to the lower header, substantially as set forth.

1,920,082. CONTAINER FOR REFRIGERANT. Walter S. Josephson, Brooklyn, N. Y., assignor to Dryice Corp. of America, New York, N. Y., a Corporation of Delaware. Filed Dec. 31, 1929. Serial No. 417,637. 2 Claims. (Cl. 62-91.5.)

1. A method of refrigerating at moderate relatively high, relatively constant temperatures, which method includes ab-



1,920,082

sorbing heat through the walls of a container and applying it to effect phase changing action of low melting point solid carbon dioxide intimately associated with relatively high temperature phase changing moisture, thereby depositing an insulating, moderate-temperature blanket of frozen moisture on the solid as it passes from its interior variably heating the exterior surface of said container by enclosing a product to be refrigerated in contact with said surface, thereby removing moisture from the surface of said blanket at rates varying automatically with variations in heat applied by the product.

11 Westinghouse Units Sold in Two Hours

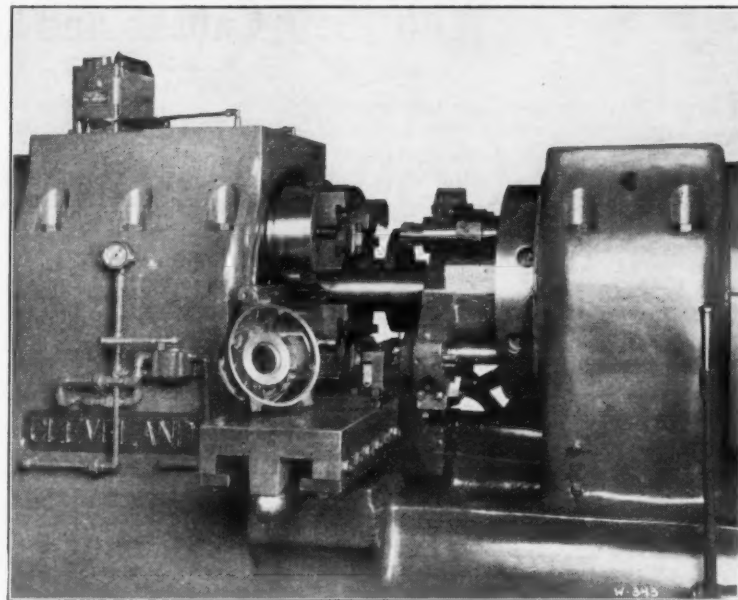
RICHMOND, Va.—A refrigerator sale every eleven minutes between the hours of 9 a. m. and 11 a. m., or 11 sales, was the record made one day recently by Thalheimers' Department Store, Westinghouse dealer here.

Sixty-three Westinghouse refrigerators installed in the Stuart Court Apartment house in this city counted the most recent large sale for the dealership.

In the month of May, Thalheimers' sold approximately one-third of the total number of refrigerators installed in the city of Richmond. Commercial sales made during this same time included 10 water coolers to the Albe-marle Paper Co., an AP-44 Seeger cabinet and an ice maker to the Crippled Children's Hospital, two AP-200's to barbecue stands, an AP-200 to a former president of the United States Chamber of Commerce, and a Westinghouse refrigerator to the city of Richmond's chief inspector of the electrical department.

When Thalheimers' celebrated its ninety-first anniversary, a sales contest was planned lasting seven days. The person making the largest percentage of sales was rewarded with a nine-day trip to the World's Fair with all expenses paid. Final check-up showed the department with 325 per cent of its quota.

New Grunow Plant Equipment



This Cleveland multiple spindle chucking machine is used for machining motor frames from alloy castings nine in. in diameter.

ELECTRICAL SHOW TO BE HELD SEPT. 20-30

NEW YORK CITY—Three years of progress in the electrical and radio industries will be evidenced at the 1933 National Electrical Show, date of which has been set for Sept. 20 through 30 in Madison Square Garden here.

More than 60 per cent of available space on the show floors has already been reserved, according to Joseph Bernhart, manager of the exposition. Two radio broadcasting stations are being installed in the Garden for use of exhibiting manufacturers who sponsor national radio programs and will have special broadcasts during the show.

Management of the show has invited the New York police department to demonstrate its newest equipment in short wave radio communication to squad cars, police airplanes, and harbor boats, and has asked several branches of the U. S. Army and Navy to exhibit apparatus employed in radio signalling and in sound and sight detection on land, sea, and in the air.

These and other highly specialized communication and aeronautical devices will be used principally as means of attracting the general public to the show. Admission to the exposition will be 25 cents. A number of electrical appliance distributors will distribute tickets among their prospects as a sales promotion activity.

Following is a list of companies which have already contracted for space at the show:

Apex Rotarex Corp., Atwater Kent Mfg. Co., Brooklyn Edison Co., Campbell Metal Window Corp., Commercial Credit Co., Conover Co., Continental Diamond Fibre Co., Crosley Radio Corp., Delco Heat, Domestic and White Sewing Machine Co., Electrical Testing Laboratories, Emerson Radio & Phonograph Corp., Electrol, Inc., Fada Radio & Electric Corp.

Fay Co., Fitzgerald Mfg. Co., Frigid-air Sales Corp., Ford Motor Co., General Electric Co., Gibson Electric Refrigerator Corp., Graybar Electric Co., Grigsby-Grunow Co., General Household Utilities Co., Halson Radio Mfg. Co., E. Ingraham & Co., Kelvinator Corp., N. B. Latham & Co., McGraw-Hill Publishing Co., New York Edison Co.

Norge Corp., Nineteen Hundred Corp., New York & Queens Electric Light & Power Co., Philco Radio & Television Corp., Petroleum Heat & Power Co., Premier Vacuum Cleaner Co., Proctor & Schwartz Electric Co., Radio & Electric Appliance Journal, Radio Merchant.

R. C. A. Victor Co., Stromberg Carlson Telephone Mfg. Co., Sessions Clock Co., Singer Sewing Machine Co., Sparks-Withington Corp., Stewart-Warner Corp., United American Bosch Corp., Utah Radio Products Co., United Electric Light & Power Co., Waters-Genter Co., Westinghouse Electric & Mfg. Co.

From Station to Kitchen In 90 Minutes

WINNEMUCCA, Nev.—When Stephenson Drug Co. here, Westinghouse dealer, was informed at 10 o'clock one morning by telephone that its long-awaited shipment of refrigerators was at the station, it lost no time in going after business.

A salesman called a prospect and asked permission to give a demonstration of Westinghouse refrigeration at her home. Securing her permission, he picked up the refrigerator at the depot and delivered it to the prospect's address.

By the time the clock read 11:30, the refrigerator had been sold to the prospect, and was in operation.

Apartment Owners To Hold Meeting

CLEVELAND — Apartment house owners from every section of the United States have been called to this city for a national convention Aug. 21, 22 and 23, to form a permanent national organization and to draft a code in cooperation with the national recovery movement.

Insurance, mortgage loan officials and all allied with the apartment house business are also being asked to Cleveland by George T. Sharp, president of the Apartment House Owners Association of Cleveland, the organization in charge of the convention.

The Cleveland association has retained B. J. Summerhays, publisher of the *Executive Economist*, former economic consultant of the Ways and Means Committee of U. S. Congress and the federal treasury department, to draft a code for the Ohio apartment house owners as required under the Ohio Carney act, which parallels for Ohio the NRA.

The code as approved in Ohio will be submitted to the convention in Cleveland as the model for the national code. Sessions will be held at Hotel Carter.

LEONARDS EXHIBITED FOR BETTER HOMES WEEK

PHILLIPSDALE, R. I.—Barrie's Radio Store, Leonard dealer here, had a refrigerator display in the East Providence Town Hall when the Rhode Island Better Homes Week was held here. On each night of the exhibit, two home economists gave a demonstration of cold cookery to the public.

McCord Refrigeration Products

Commercial Evaporators

Domestic Evaporators

Condensers

McCord Ice Trays

Spiral Finned Tubing

Spiral Copper Finned Iron,

Steel or Copper Pipe

McCord
RADIATOR &
MFG. CO.
DETROIT - MICH.

BUYER'S GUIDE

MANUFACTURERS SPECIALIZING IN SERVICE
TO THE REFRIGERATION INDUSTRY

A NEW FIN COIL by PEERLESS

Wedge-locked and edge-locked aluminum fins on
tinned copper tubing for methyl chloride, sulphur
dioxide, F-12, etc.—aluminum tubing for ammonia.
Absolute Metal to Metal Contact.

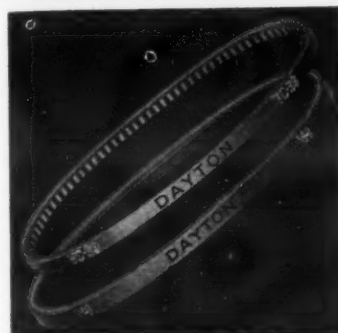
A Superior Coil in which Soldered Return Bends have
been eliminated.

Priced to meet 1933 conditions.

Write—Wire for Catalog.



PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.



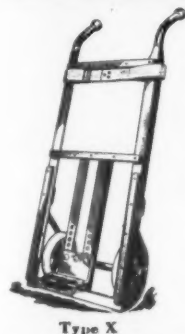
Dayton V-Belts

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.

Dayton, Ohio

The World's Largest Manufacturer of V-Belts



The Dayton CARRIER TRUCK Deliver Your Refrigerators on Rubber

Type X has 53 inch Handles and 8
inch Rubber Wheels. Type Y has 70
inch Handles, 5 inch Rubber Wheels
and skids.

Type X with one strap \$16.00
Type Y with one strap \$17.50
f.o.b. Dayton

International Engineering Inc.

Dayton, Ohio

15 Park Row — New York



THE TRADEMARK OF FOUR PACE SETTERS IN COIL EFFICIENCY

SUR-E-FEX Fin Coils
FAN-E-FEX Diffusing Units
HUM-E-FEX Non-Dehydrating Coils
SAN-E-FEX Air-Conditioning Units

SEND FOR NEW CATALOG DESCRIBING
THESE SENSATIONAL DEVELOPMENTS

REFRIGERATION APPLIANCES, INC.

H. J. KRACKOWIZER, Pres.

1342 WEST LAKE ST., CHICAGO

ALCO THERMO VALVE

Type NR



A Thermostatic valve that can be
installed in any position or location—
and in any temperature.

Methyl Chloride — F-12
Sulphur Dioxide

The control always resides in the thermal
bulb—even if the body of the valve is
subjected to a lower temperature.

Write for  Bulletin 129

ALCO VALVE CO., INC.

2629 Big Bend Blvd., St. Louis, Mo.

New York • Los Angeles • San Francisco

Dallas • Atlanta • Denver

Group Order Rates for U. S. and Foreign Countries

PUBLICATIONS	NUMBER	UNITED STATES*	CANADA†	ALL OTHER COUNTRIES
Electric Refrigeration News	1 subscription . . .	\$3.00	\$6.00	\$5.00
	5 or more, each . . .	2.75	5.75	4.75
	10 or more, each . . .	2.50	5.50	4.50
	20 or more, each . . .	2.25	5.25	4.25
Refrigerated Food News	1 subscription . . .	\$1.00	\$2.00	\$2.00
	5 or more, each95	1.95	1.95
	10 or more, each90	1.90	1.90
	20 or more, each85	1.85	1.85
BOTH PAPERS	1 subscription . . .	\$3.50	\$7.00	\$6.00
	5 or more, each . . .	3.25	6.75	5.75
	10 or more, each . . .	3.00	6.50	5.50
	20 or more, each . . .	2.75	6.25	5.25
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*U. S. and Possessions and Pan-American Postal Union Countries.

†High rates for Canada are due to Canadian tariff of 5c per copy.

DETROIT LUBRICATOR COMPANY

TRUMBULL, LINCOLN,
MARQUETTE & VIA DUCH
DETROIT, MICH.

Manufacturers of "Genuine Detroit" Automatic
and Thermostatic Expansion Valves, American Cube-
makers, American Refrigeration Sections, Automatic
Controls for Temperature and Pressure, Electric Valves
for Refrigerant and Water Control, Thermostats, Hu-
midistats and complete controls for Air Conditioning.

Descriptive literature gladly sent upon request

Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

QUESTIONS

Sound Deadener

No. 1324 (Manufacturer, Indiana)—
"In your July 19 issue there was an
article describing Dr. J. A. Negy's
sound deadener. Will you please supply
me with his address so that literature
may be obtained on this process?"

Answer—6560 Mack Ave., Detroit,
Mich.

Cooke Seals

No. 1325—"Can you give me the
address of the company manufactur-
ing the Cooke seal for refrigeration
compressors?"

Answer—Rotary Seal Co., 809 W.
Madison St., Chicago, Ill.

Ammonia Expansion Valves

No. 1326 (Manufacturer, Illinois)—
"Please advise us where we can ob-
tain information and literature on an
expansion valve for use with am-
monia. Also, can you tell us if Cros-
ley is still manufacturing the two-
ball ammonia outfit, where one boiler
is heated and the other furnishes
refrigeration?"

Answer—For data on ammonia
valves get in touch with Alco Valve
Co., 2625 Big Bend Blvd., St. Louis,
Mo., or Peerless Ice Machine Co., 515
W. 35th St., Chicago, Ill.

Yes, the Crosley Ice-Ball is still be-
ing manufactured by the Crosley
Radio Corp., Cincinnati, Ohio.

Statistics from 1930 to 1933

No. 1327—"Can you give us statistics
on the output of refrigerators during
the years, 1930, 1931, 1932, and 1933?"

Answer—See the chart entitled
"Four-Year Analysis of Monthly Sales"
on page 4 of the last issue of ELECTRIC
REFRIGERATION NEWS.

Replacement Parts

No. 1328 (Service company, Canada)—
"We do quite a lot of service work
on machines other than those for
which we are distributors, and are ex-
periencing difficulty in buying parts
for other standard makes. We are
wondering if you can put us in touch
with any one who can supply them?"

Answer—These companies specialize
in the supply of replacement parts for
various makes of electric refrigera-
tors:

Chicago Refrigeration Service Co.
360 E. Grand Ave., Chicago, Ill.
Home Appliance Service Co., Inc.
714 W. Market St., Greensboro, N. C.
Iceless Refrigeration Accessories Co.
2401 Chestnut St., Philadelphia, Pa.
Melchior, Armstrong, Dessau Co.
116 Broad St., New York, N. Y.
Refrigeration Service, Inc.
3109 Beverly Blvd., Los Angeles, Calif.

Water Cooler Figures

No. 1329 (Manufacturer, New York)—
"Can you give us any figures on the
annual production of water coolers?"

Answer—Tabulated below is the
annual sales of water coolers by mem-
bers of the National Electrical Manu-
facturers Association which probably
represent a large proportion of the
total sales for all companies:

Year	Water coolers with high sides	Water coolers with low sides	Total water coolers
1928	11,522	1,670	13,192
1929	20,819	7,362	28,181
1930	26,586	5,728	32,314
1931	17,832	3,217	21,049
1932	8,890	1,562	10,452

Condenser Fin Machine

No. 1330 (New Zealand)—"Will you
be good enough to inform us where
we can purchase a machine for man-
ufacturing spiral crimped fins for air-
cooled condensers.

"Also, can you refer us to a good
book dealing with electric refrigera-
tors. We do not want an ordinary in-
stallation and service manual, but a
book discussing design problems of
evaporators, condensers, and compres-
sors."

Answer—For a machine to make
such fins, we suggest you inquire of
the McCord Radiator & Mfg. Co., 2587
E. Grand Blvd., Detroit, Mich.

The "Refrigerating Data Book,"
published by the American Society of
Refrigerating Engineers, 37 W. 39th
St., New York City, contains consid-
erable information on the design of
such equipment.

Viking Club Members Now Total 500

DETROIT—Membership in the Vik-
ing Club, honorary organization for
star salesmen of Norge electric refrig-
erators, now totals more than 500, ac-
cording to a report made Aug. 1 by
James A. Sterling, advertising and
sales promotion manager of Norge
Corp. The club was started Jan. 1 of
this year.

To qualify for membership in the
organization, Norge salesmen must
sell 10 refrigerators at retail to indi-
vidual purchasers. Having become a
member, a salesman by selling a spe-
cified number of units can obtain spe-
cial awards. So far, 12 of the 500 Vik-
ings have earned these special prizes,
according to Mr. Sterling.

AGE FACTOR STUDIED BY SERVICE BUREAU

NEW YORK CITY—Problems arising
from increased age of workers in
manufacturing plants, and possible
solutions, are set forth in a new study
prepared by the Policyholders Service
Bureau of the Metropolitan Life In-
surance Co., entitled, "The Older Em-
ployee in Industry."

Out of 5,000 manufacturing com-
panies to which the bureau put the
question of what to do with older em-
ployees, 800 large concerns stated they
had special programs in operation to
care for the problem. Their detailed
reports were analyzed and classified,
and the results presented in the sur-
vey.

Divided into four main sections, the
booklet takes up in turn "Origin and
Review of Problem Cases," "Continu-
ance at the Same Job," "Transfer to
Another Job," and "Supplementary
Measures Affecting Older Employees."

First step in solution, according to
the companies contacted, is discovery
of the problem. Sometimes this is
uncovered through casual observation,
through study of a record, or through
physical examination.

Once the disability is discovered, the
employer must decide, if the worker
is to be kept on the payroll, how his
time can be used to the best advan-
tage. One possibility is to continue
the worker at the same job, often ad-
justing hours, wages, or duties in line
with his age. Frequent rest periods
are sometimes provided, assignment
to an easier shift, or a rearrangement
of the work. Special mechanical aid
may solve the problem.

The employer also has the option of
changing the employee to another more
suitable job, which is dealt with in
the next section of the survey. This
plan is workable in those plants em-
ploying semi-skilled or unskilled labor,
where the employee can be easily
taught new work. Diversification of
training for employees, according to
the report, will also enable the older
employee to find a new niche. Typi-
cal jobs and wages conclude this sec-
tion.

Concluding chapter concerns supple-
mentary measures affecting older em-
ployees, such as medical supervision
and safety precautions.

Two charts summarize the study—
"The Older Employee in Industry: A
Chart of Alternative Procedures," and
"The Older Employee Continued on
Payroll: Detailed Chart of Possible
Procedures."

Appendix A gives statistics on age
distribution of gainful workers in the
United States, while a selected reading
list makes up Appendix B.

FINANCIAL STATEMENTS

Grigsby-Grunow Co.

CHICAGO—Grigsby-Grunow Co. re-
ports a net loss of \$755,011 for the
three months ended June 17.

Comparable figures for last year are
not available because of a change in
the company's fiscal year. A deficit
of \$2,236,277 was incurred in the year
ended last Dec. 31.

C. I. T. Corp.

NEW YORK CITY—Commercial In-
vestment Trust Corp. reports con-
solidated net profits amounting to
\$2,799,582 for the six-month period
ended June 30, which after payment
of dividends on the first preferred
stocks which were retired during the
period, amounted to a dividend of
\$1.12 per share on common stock.

This compares to consolidated
profits for the first half of 1932 of
\$2,947,280, which after payment of pre-
ferred dividends amounted to \$1.03 per
share on common stock.

The net volume of bills and accounts
purchased during the six months
amounted to \$189,800,587, compared
with \$171,584,776 for the same period
last year.

The figures on volume and profits
included the volume of Universal
Credit Corp. since April 15, 1933, as
of the day the business was acquired
by C.I.T. Corp. from the Ford Motor
Co.; also the net profits of that cor-
poration applicable to C.I.T. Corp.'s
majority interest therein since April
15, 1933.

The consolidated balance sheet as of
June 30, 1933, shows current assets of
\$147,458,542 and current liabilities of
\$52,472,206. Repossessed automobiles
and other products at depreciated
values totaled only \$179,692.

DELIVERS 325 KELVINATORS IN SINGLE DAY

GREENVILLE, N. C.—Carolina Kel-
vinator Co., distributor here, recently
delivered 325 Kelvinator household
refrigerators to dealers in a single
day, according to J. T. Little, the com-
pany's general manager.

CLASSIFIED

PAYMENT in advance is required for
advertising in this column.

RATES: Fifty words or less, one inser-
tion \$2.00, additional words four cents
each. Three insertions \$5.00, additional
words ten cents each.

INDEPENDENT SERVICE COMPANIES

HALECTRIC Thermostat repair service,
Ranco, B & B, Two dollars each, one year
guarantee, prompt service. Halectric Lab-
oratory, 1793 Lakeview Road, Cleveland,
Ohio.

EQUIPMENT FOR SALE

WHOLESALE jobbers of repossessed and
new electric refrigerators—large stock
always on hand. Shipments to all parts
of the United States and foreign countries.
Keystone Equipment Corporation, 467
Fourth Avenue, New York, N. Y.

CATALOGS

Wagner Split-Phase Motors

Long-hour-duty split-phase motors
are described in a new six-page bulle-
tin issued by the Wagner Electric
Corp., 6441 Plymouth Ave., St. Louis,
Mo. Illustrations and text describe
every part, and its function.

Personal Guidance

EACH man trained by the U. E. I.
method is judged as an individ-
ual. He is personally and individ-
ually guided through the training by a
member of our Engineering Staff . . .
No books . . . No classes . . . No mob
psychology is employed.

UTILITIES ENGINEERING INSTITUTE

Wells at Kinzie Street, Chicago, Illinois
Complete and practical refrigeration
training by extension methods.



Testing Service for Domestic and Commercial Electric Refrigeration

Testing and experimental
laboratory service for Man-
ufacturer, Distributor, Cen-
tral Station. Test data ex-
clusive property of client.

Electrical Testing Laboratories 80th St. & East End Ave. New York

ACE HARD RUBBER SLIDING & HINGED DOORS for Refrigerated Display Cases



A wide range of standard styles
and sizes. Also, Ace hard rubber
slide rails, jambs, trim, glazing
strips, etc. Special parts to order.

Write for catalogue and prices

AMERICAN HARD RUBBER COMPANY

11 Mercer St., New York, N. Y.
Alcon, O. — 111 W. Washington St., Chicago, Ill.

Fulco Adjustable REFRIGERATOR COVERS

Fit any size refrig-
erator. Big saving over
old styles. Easy to
adjust—more conven-
ient. Made of strong,
durable green drill-
fannel lining and
non-lump filler. Write
for prices today.

Fulton Bag & Cotton Mills
FULTON, N. Y.
GREENVILLE, S. C. NEW YORK, N. Y. CHICAGO, ILL.

Old Crombie Walks Again in New Norge Sales Literature

By Elston D. Herron

DETROIT—Not to supplant, but rather to supplement the sales training material contained in the fictionized manual, "A Week with Old Crombie," which Norge Corp. prepared for its dealers and salesmen last year, a series of 10 new sales education booklets are being used by Norgemen this year as a basis for continued study of proper selling technique.

Whereas the Crombie sales manual was concerned principally with the fundamentals of refrigeration selling, the new booklets have as their chief aim that of keeping Norge dealers and salesmen "in tune with the times"—helping retailers cope with sales problems of the current season.

Seven Manuals Written

Seven of the little manuals have already been written by James A. Sterling, advertising and sales promotion manager of Norge Corp., who will also prepare the remaining three of the series.

Written in story form, these booklets are built around the sales activities of Old Crombie—fictionized Norge refrigerator distributor created by Mr. Sterling in the 1932 manual—and the staff of star assistants in the Crombie distributorship.

In this issue of the News is presented a review of the first booklet of the series, and succeeding issues will carry reviews and extracts based on the manuals. Digest of manual No. 1 follows:

Crombie Starts Campaigning

The book, entitled "Old Crombie Starts Campaigning," opens in the distributor's Brownsville store, where a rather depressed group of salesmen is present for a night meeting. Business has been none too good, and Old Crombie is coming to talk over the situation.

Introductory remarks are dispensed with in short order, and then Mr. Crombie makes this rapid-fire analysis and statement of purpose:

"I'm not going to try to get you to work any harder—I don't think that's your trouble—but I am going to get you working more intelligently . . . I'm going to help you get back to those fundamentals that most of you know, but have forgotten in the mad rush to make sales that somehow won't work out."

Selling's Five Fundamentals

Personal selling, says Old Crombie, embodies five fundamentals, which are:

1. An approach that inspires interest and confidence rather than repelling the prospect.
2. A continuance that carries on and heightens that interest while removing hidden objections and creating justification for the purchase.
3. A coverage of features which make the prospect realize the product's individuality and advantages.
4. A discussion of the product which makes the prospect visualize it in her home and in use, rather than on the showroom floor.
5. A closure based on common sense.

Explains Lost Sales

Remainder of the distributor's talk highspots certain selling fundamentals, and brings to light the why's and wherefore's of many lost sales. This is how Old Crombie tells his sales force about them:

"Why aren't refrigerators being sold? . . . Simply because some salesman has not overcome the prospect's objections, whether spoken or unspoken. And the trouble starts right with the approach.

"In making an approach in the store, there are two things to keep in mind: The shopper would not have stopped to look at the Norge if she were not interested. The opening words of the contact should be based on that assumption, and should be phrased to quicken the interest rather than to drive the shopper into a flurried retreat.

"The approach in the home is based on the same general line of thought. A direct and smiling approach such as, 'Mrs. Jones, I'm John Smith. May I talk with you for a few minutes?' is far more productive than some of the long-winded remarks often attempted."

Regarding justification of the purchase, the salesmen are told that "All of us have got to justify anything we buy to somebody, even though that somebody may be only ourselves.

"And justifying the purchase achieves more than merely overcoming hesitancy. It often overcomes hidden objections that otherwise would linger and lose the sale. It means the general presentation of refrigeration in such form that it takes preference in her (the housewife's) mind over all other things."

The presentation of the product, says Old Crombie, must substantiate the general buying desire already formed as a result of the justification

program. It must clinch the thought of *buying now* rather than *buying later*.

Explaining why many salesmen fail in product presentations, he says, "Their own thoughts about the product are so poorly phrased that they do not register in the prospect's mind in the form they should. Instead, they become a meaningless jumble of words."

Closures should usually be made with the husband present, the salesmen are told, and should take the form of a terse summary of the entire presentation, with particular emphasis on the mechanical superiority which spells economy of operation and maintenance.

As a closing point of his address, Mr. Crombie makes a few whipcracker remarks on proper comparisons of ice and electric refrigeration. "Too many men," he says, "weaken their cases by constant comparisons in dollars and cents—as actual savings are all subject to argument.

"A better turn, I think, in comparing ice and electricity is this: It costs more to wear shoes than to go barefoot. A house is more expensive than a tent. A bathtub costs more than a barrel. An automobile costs far more than a horse and buggy. And yet, no one would go backward—go barefoot, live in a tent, bathe in a barrel, or drive a horse to work."

GRIGSBY-GRUNOW ISSUES JULY SHIPMENTS REPORT

CHICAGO — Grigsby-Grunow Co. here shipped a total of 29,777 electric refrigerators and radio sets during July, according to LeRoi J. Williams, vice president and general manager of the company. This made the largest month of 1933, with the exception of June, from the standpoint of unit shipments, Mr. Williams says.

"Refrigerator shipments for July were more than seven times those of July last year, and while July of 1932 was the lowest radio month of that year, this year's July radio shipments were exceeded only by those of June, which set a new monthly high for almost two years," the vice president states.

OPTIMISTIC OLDSTER BUYS WESTINGHOUSE RANGE

DANVILLE, Vt.—One old gentleman of Danville has lived a long time, but, like traditional New Englanders, he evidently expects to live a much longer time.

Entering the Wells River, Vt., shop of A. H. Bailey, Inc., Westinghouse dealer, the 91-year oldster asked for a demonstration of the Westinghouse range. He seemed in agreement with most points made by the demonstrator, but raised one serious objection which the dealer had difficulty in overcoming.

Only when satisfied the Westinghouse would outlast all other ranges would the nonagenarian sign the order.

Store of Many Tongues Is Paris-Frigidaire

PARIS, France—Frigidaire, Ltd., export refrigeration and air-conditioning unit of General Motors, has a floor salesman here who speaks seven languages fluently, according to G. R. Mountjoy, Frigidaire advertising manager for France. The salesman is Jean Matar.

The members of the Paris sales staff speak a total of 14 different languages—English, French, German, Italian, Spanish, Greek, Russian, Arabic, Turkish, Roumanian, Dutch, Hebrew, Flemish, and Hungarian.

FREE FOOD BRINGS BUYERS AFTER WESTINGHOUSES

CLEVELAND—Forty-one floor sales of Westinghouse refrigerators in three days resulted from a full page newspaper announcement run July 22 by the Danforth Refrigeration Co., distributor, and its Cleveland dealers, saying that all Westinghouse refrigerators sold during the week following would be delivered filled with food from the city's Fisher stores.

KELVINMEN GET SIGNS WITH DISPLAYS

DETROIT—Kelvinator distributors and dealers who subscribe to the factory's series of window display materials are being given free of charge a Neon sign to identify their stores as Kelvinator outlets.

BURRITT REPORTS JULY KELVINATOR SHIPMENTS

DETROIT—July shipments of electric refrigerators by Kelvinator Corp. were 230 per cent greater than shipments in July, 1932, according to H. W. Burritt, vice president in charge of sales.

Shipments for the first nine months of the present Kelvinator fiscal year were 40 per cent greater than shipments for the entire preceding Kelvinator fiscal year.

Unfilled orders on hand are five times as great as the unfilled orders at the same time last year, according to Mr. Burritt.

10,000 WOMEN ATTEND G-E COOKING SCHOOL

LOS ANGELES—Cooperative cooking school held here recently in the Philharmonic Auditorium by George Belsey Co., Ltd., G. E. distributor, and Safeway Stores, drew 10,000 women to witness demonstrations of cooking prepared with the General Electric range and refrigerator.

Mrs. Julia Lee Wright, director of the Safeway Home Makers' Bureau, conducted the demonstrations.

Announcement of the school was made in advance by means of 100,000 handbills distributed in Los Angeles, while more than 100 inches of publicity for the range and the Belsey company were secured in the *Herald-Express*. Participation of the distributor in the school cost less than \$100.

Aug. 23 Commercial Machine Specifications Issue of ELECTRIC REFRIGERATION NEWS

Refrigeration distributors and dealers *want* specifications on the equipment they sell and on the equipment sold by the competitors.

Earlier this year the News printed specifications on household refrigerators with a resulting demand of over 10,400 copies (*a big extra value for advertisers*).

Sometime later the News printed the specifications on mechanical beer coolers and the demand for extra copies again proved unusual (*another extra value for advertisers*).

Now in the August 23 issue the News will print specifications on commercial machines—(*which means another extra value for advertisers*).

Commercial refrigeration is getting a new lease on life.

The return of beer is improving the income of hotels and restaurants, making them better

able to buy much needed refrigeration equipment.

The growing knowledge on the part of the meat market and grocery as to the profit building abilities of mechanically refrigerated display cases makes this part of the commercial market particularly attractive.

The increase in the number of manufacturers going after this market makes the competition for the *good* distributor and dealer of great importance. He can almost pick and choose—and he will.

The best potential commercial refrigeration distributors and dealers read *Electric Refrigeration News* every week. They look to it for sales information.

Your sales message in the August 23 issue will reach these distributors and dealers with particular effectiveness.

Reserve Your
Space Now
Advertising
Forms Close
Aug. 19, '33

H. W. Mateer, Adv. Mgr.
Electric Refrigeration News
550 Maccabees Bldg.
Detroit, Mich.

Date _____

We want our advertising message in the Commercial Machine Specifications issue Aug. 23.

Reserve space of _____ columns by _____ inches.

Company Name _____

Street Address _____

City & State _____

Signed by _____

A Century of Progress Supplement

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC

WRITTEN TO BE READ ON ARRIVAL

REFRIGERATION NEWS

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 9, No. 15, SERIAL No. 229
ISSUED EVERY WEEK

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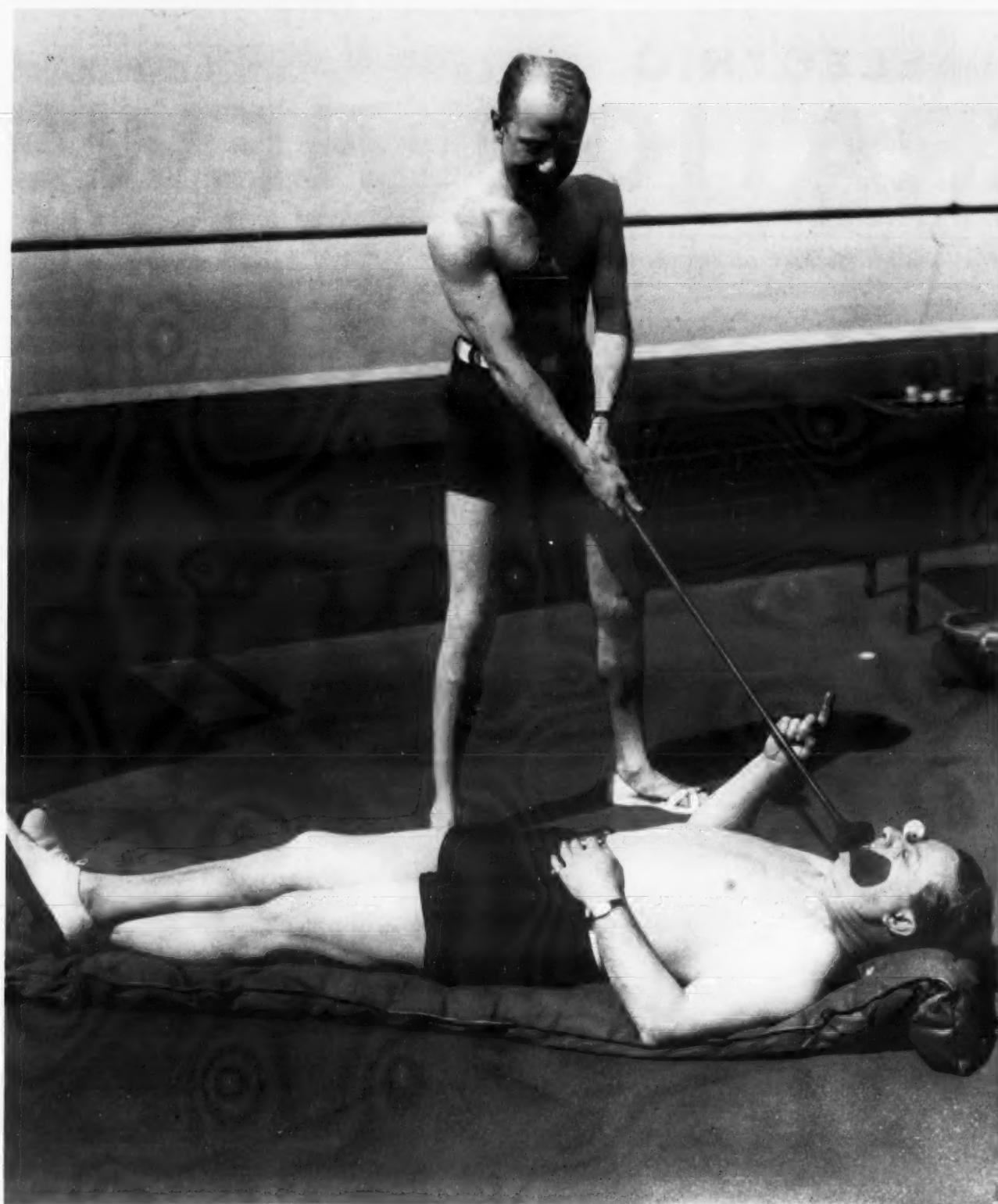
DETROIT, MICHIGAN, AUGUST 9, 1933

Entered as second-class
matter Aug. 1, 1927

IN TWO PARTS, PART TWO
TEN CENTS PER COPY



When General Balbo's flashing planes, which had flown in formation all the way from Italy to A Century of Progress exposition in Chicago, droned over the Hall of Science (above), visitors to the Fair received one of the biggest thrills of the generation. William C. Grunow, president of General Household Utilities Corp., presented the daring flyers with four new Grunow refrigerators to take back to their Air Club, and to Premier Benito Mussolini, King Victor Emanuel, and Pope Pius XI.

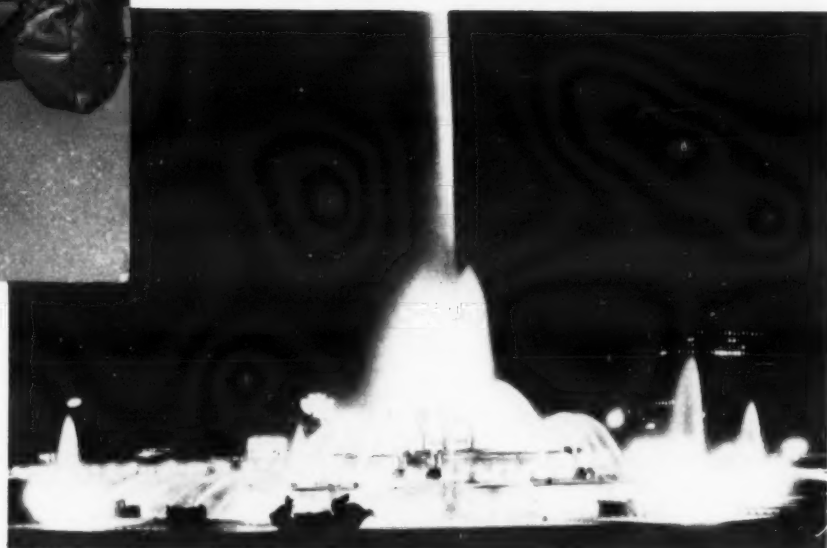


Water golf, which is simply the chance to wham golf balls out into Lake Michigan, is one of the Fair amusements which Amos 'n' Andy are enjoying.

Dorothy Swanson, blonde model for many magazine illustrations, and Avis Kistler look over a new Grunow refrigerator (below).



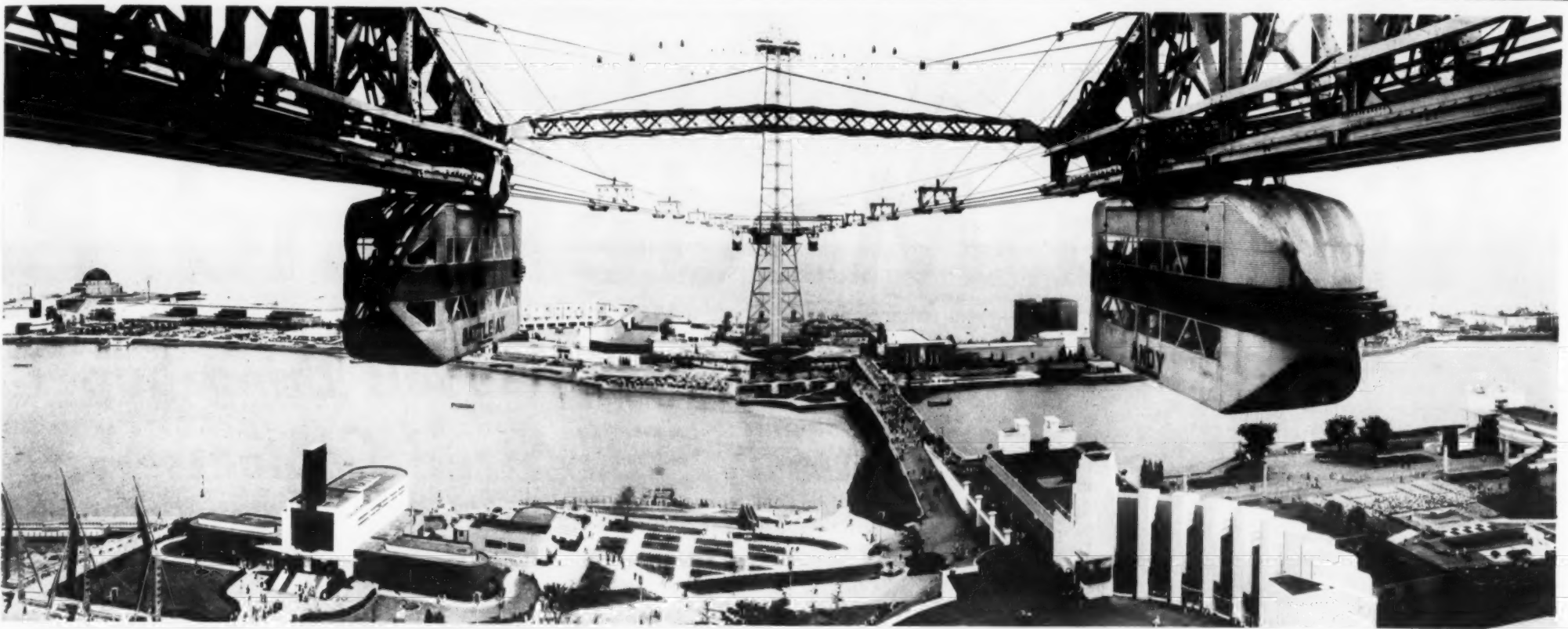
Like an oil painting is this glowing night scene of a speedboat dispatcher at one of the docks which hem the waterfront.



Buckingham Fountain (right), which is within a brick's heave of the Fair's north end, is one of the noblest sights in Chicago.



None other than Floyd Gibbons, noted reporter, war correspondent, and radio headliner was found by the roving photographer, autographing books and papers for people who saw him at A Century of Progress.



Dominating A Century of Progress exposition, the Sky Ride offers the tallest towers in Chicago from which to see the Fair, as well as trips in the rocket cars shown above.



Jane Addams (above), founder of the Hull House sociological and good citizenship center, and Chicago's leading citizen, broadcasts a message in A Century of Progress ceremony.



Because the 1933 Chicago World's Fair is implanted upon land reclaimed from Lake Michigan, there's plenty of water handy for those who like boating. Everything from speedboats and Venetian gondolas to the type of craft shown above is available.



Grunow refrigerating machines are displayed in the Hall of Science (right) both as instruction on the nature of mechanical refrigeration, and to cool perishable exhibits.

NOW—Grunow Skyr With a Model and Price

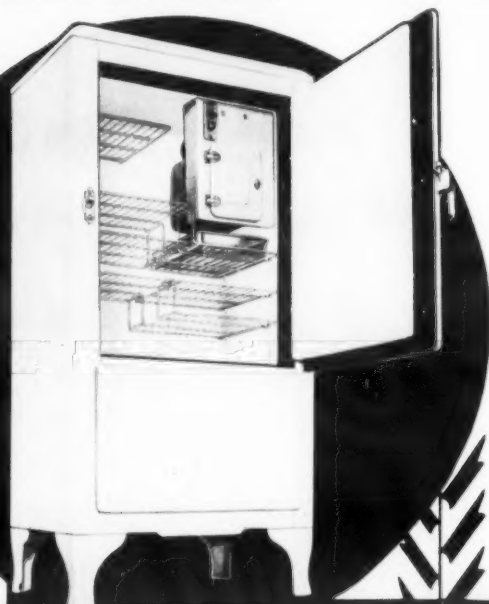
New Progress Models Bring Super-Safety in Sturdy, Full-Sized Cabinets With Safe

GRUNOW PROGRESS MODELS

POWERFUL, ECONOMICAL—and super-safe! Not miniatures, but big, roomy, convenient, quality refrigerators in every detail! Use identical Grunow-Carrene unit employed in De Luxe models. Note abundant, well-arranged shelf space, sealed-in type freezing compartment, 9-point temperature control—all typical of the great list of high-priced refrigerator features now offered in the popular-priced field by America's supreme refrigerator value.



MODEL 70G



MODEL 50G



MODEL 60G

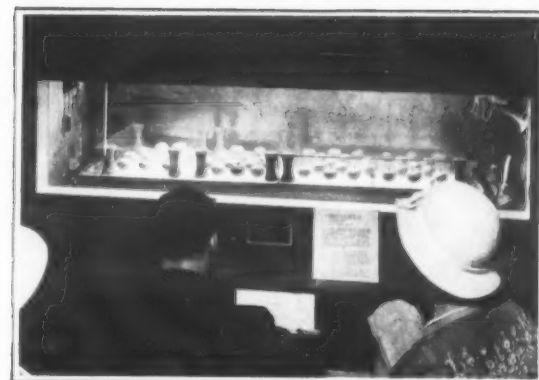
NOW! There's not a home—not a family—not a purse among all the refrigerator prospects in America that's closed to the Grunow dealer. The sensational Grunow miracle—super-safe Grunow-Carrene refrigeration—is available now to all!

Grunow rocked the industry with the already famous De Luxe model Grunow refrigerators. Set an utterly new standard of safety, economy, beauty and convenience in household refrigerators at prices that stunned competition. Sales shot up. Doubled—tripled—leaped upward 500% in three short months.

Now Grunow repeats! Three astounding new Progress models utterly revolutionize values—and set entirely new standards of quality—in the popular-priced field. In sturdy, long-lived, distinctively beautiful cabinets of reinforced steel (finished in 3 coats of beautiful De Lux, baked on), they offer your customers all the safety and economy of Grunow's famous Carrene unit at prices that open a whole new market to you.

They're not midgets or miniatures, but full-sized refrigerators. Not a "distress" line forced by falling sales on over-priced models, but a quality line planned as a permanent companion to the De Luxe Grunows.

GRUNOW HONORED AT A C



Grunow
SUPER-SAFETY

rockets Dealer Sales Price for Every Prospect!

Safety of Carrene* to Popular-Priced Field
Same Noiseless Unit as De Luxe Grunows

There's no compromise on quality. Their unit is identical with that in the De Luxe Grunow. They bear the Grunow name and the Grunow guarantee.

Here's refrigeration years ahead—easy to sell because it's priced and designed to meet every prospect's need—and so dependably constructed that now you can sell refrigerators and **KEEP THE PROFITS!** Find out now about Grunow-Carrene refrigeration—the revolution in home refrigeration—and the new sales and profit opportunity it offers you.

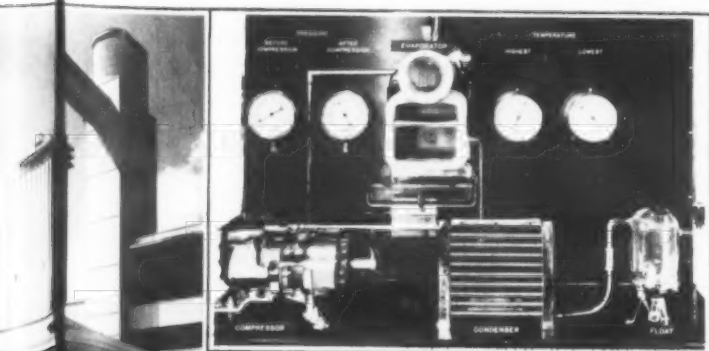
GENERAL HOUSEHOLD UTILITIES COMPANY
4127 George Street, Chicago, Illinois

GRUNOW DE LUXE MODELS

AMERICA'S most beautiful refrigerators—10 years ahead in safety, serviceability, and value. The refrigerator that upset the industry, with the dependability and super-safety of Carrene in a cabinet of startling beauty, with 34 De Luxe features that every housewife wants. Note sectional shelves, automatic light, flush doors, seamless steel cabinet and host of other sales features that make this the fastest-growing seller in the refrigerator world.

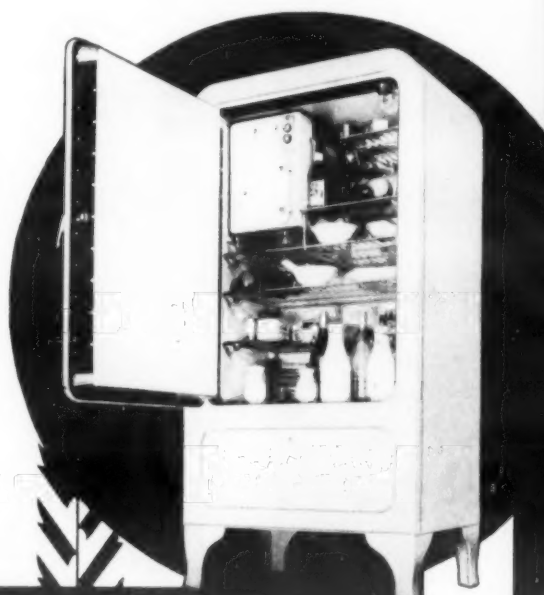
***CARRENE**—the magic fluid refrigerant used by Grunow alone—gives super-safety in all Grunow models. It is a liquid, not a gas, under all ordinary conditions of pressure and temperature! It operates under vacuum, not high pressure! You can handle it like water—actually opening the refrigerating system to make safety demonstrations no other household refrigerant in the world can duplicate!

AT A CENTURY OF PROGRESS



Millions are seeing the sensational Grunow-Carrene units at Chicago's great Century of Progress Exposition. The unit (above) is honored with a prominent position in the Hall of Science—home of modern miracles, while two others are featured in the display (left) of fruit-ripening by ultra-violet rays.

Grunow
REFRIGERATOR



MODEL 75



MODEL 50



MODEL 60

How it looks from the air. Perched atop the towering Sky Ride, the cameramen recorded this view of A Century of Progress, looking South. In the left foreground is located the Hall of Science.



Olsen and Johnson, famous comedians (and good friends of Bill Grunow) who are appearing in Chicago with "Take a Chance," are caught with crooner Rudy Vallee (below).



William C. Grunow (right), president of General Household Utilities Co., which manufactures Grunow electric refrigerators and radios in Chicago.

Night and day this section of the Grunow plant (lower left) in Chicago is working to keep up with orders. Grunow dealers are including it on their sight-seeing tours.

Distributors and dealers of Grunow refrigerators who come to see A Century of Progress exposition are also generally visitors to the Grunow plant (lower right).





Buddy Rogers, whose orchestra entertains Fair visitors at the Hotel Sherman, goes fishing with Neila Goodell, songstress with Buddy's California Cavaliers.

Lovely Dolores Gillen (right), National Broadcasting Co. radio actress, has helped entertain large audiences at the Hollywood concession of the Fair.



This unusual "shot" of one of the Goodyear Zeppelins in which Fair sojourners may ride is typical of the unexpected fashion in which they quietly slip into view.

Viewed through an archway of an oriental temple, the Hall of Science presents a noteworthy contrast of the ancient and the future.



Dr. J. D. Jordan, Grunow chemist, explains the operating cycle of the Grunow unit exhibited in the Hall of Science to Jimmy Davin, sales promotion manager.



Vincent Lopez (below), nimble-fingered pianist and orchestra leader, leaves his job of entertaining Congress hotel dine and dance patrons long enough to play miniature golf.

